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ABSTRACT

The purpose of the workshop reported here was (1) to share and exchange information from a national survey of the status of competency-based adult vocational education instruction and (2) to assist the participants in implementing or expanding competency-based programs. Contents include four groups of workshop presentations. Three are general reports on the subject: involvement of the Ohio State University Center for Vocational Education in competency-based adult vocational education; activities of the U.S. Office of Education in the same area; and an overview of the national survey part of the project. Six exemplary programs are described in the second section: an instructor initiated and operated program; a large, comprehensive program; a statewide program involving local schools, the State Department of Education, and the Vocational-Technical Education Consortium of States (V-TECS); the Adult Competency Education Project; the Adult Performance Level (APL) approach in adult vocational education; and administration, development, and operation of a school-wide competency-based adult vocational program. Adult education resources available at the Center for Vocational Education are summarized in four papers: Career Planning Programs for Women Employees; the Center's Performance Based Teacher Education Curricula Program; Adult Education Programs in ERIC; and Metric Education Instructional Materials for Vocational, Technical, and Adult Education. The final section contains twenty individual action plans developed by participants using the information obtained during the workshop. Appendixes include a sixty-item reading list. (JT)

Leadership Training Series No. 55

PROCEEDINGS OF THE NATIONAL WORKSHOP ON COMPETENCY-BASED ADULT VOCATIONAL INSTRUCTION, AUGUST 2-5, 1977

Compiled and Edited by

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The National Center for Research in Vocational Education
The Ohio State University
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January 1978

THE NATIONAL CENTER MISSION STATEMENT

The National Center for Research in Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. The National Center fulfills its mission by:

- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

Identification and Analysis of Competency-Based

Adult Vocational Education Programs Project

Interim Publication

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Occupational and Adult Education

ABSTRACT

These Workshop Proceedings comprise one of four publications from the project, "Identification and Analysis of Competency-Based Adult Vocational Education Programs." The National Workshop on Competency-Based Adult Vocational Instruction was held August 2-5, 1977, at the Center for Vocational Education, Ohio State University, Columbus, Ohio. Six presentations of exemplary programs from throughout the nation were given. Additional presentations including a report on the national survey of competency-based adult vocational instruction, information about related activities of the U.S. Office of Education, and activities and resources of the Center for Vocational Education. Small group and individual work sessions were provided for participants to meet with presenters and to prepare Individual Action Plans for applying concepts and techniques learned in the Workshop. Presentations of exemplary programs contained in these Proceedings include (1) an instructor initiated and operated program, (2) a large, comprehensive program, (3) a statewide program involving local schools, the State Department of Education, and the Vocational-Technical Education Consortium of States (V-TECS), (4) the Adult Competency Education Project, (5) the Adult Performance Level (APL) approach in adult vocational education, and (6) administration, development, and operation of a school-wide competency-based adult vocational program. Selected Individual Action Plans of participants are also contained in the Proceedings. Related project publications include a National Directory of programs, a technical research report of the national survey, and a final report.

PREFACE

Competency-based education, based on a job/task analysis, and consisting of elements such as performance objectives, individualized instruction, and criterion-referenced testing, is considered a promising means of improving adult vocational instruction. In the project, "Identification and Analysis of Competency-Based Adult Vocational Education Programs," a national survey was conducted to identify and describe competency-based adult vocational programs. During August 2-5, 1977, as part of this project, the National Workshop on Competency-Based Adult Vocational Instruction, was held at The Center for Vocational Education in an effort to share and exchange information found in the survey about the status of competency-based adult vocational instruction and to assist the participants in implementing or expanding competency-based programs. Presentations given at the Workshop are included in this publication.

Special appreciation is due to the instructors, administrators, and project directors who presented information about exemplary competency-based adult vocational programs, and who also served as small group resource persons during the workshop: Norma Brewer, Joe Cooney, Rosemary Dawson, Harry Frank, William Knaak, John Kobe, Buddy Lyle, Johnny Spears, and Charles Walejko. Their presentations were a major input into these Workshop Proceedings. Acknowledgments are also in order for Louis Anderson from the U. S. Office of Education for his presentation on related U.S.O.E. activities, and to the following staff members of The Center for Vocational Education (CVE) for their presentations on related CVE activities: Glen Fardig, Bernie Moore, John Peterson, and Patricia Winkfield. Gratitude is expressed to Robert Hancock of the Florida Division of Vocational Education for his support and assistance. Recognition is also given to those Workshop participants who have shared their "Individual Action Plans" by allowing them to be published in these Proceedings.

The project staff is to be commended for their conscientious efforts in planning and conducting the Workshop, and compiling the Workshop Proceedings: Earl B. Russell, Project Director; Cynthia K. Anderson, Project Assistant; John Boulmetis, Graduate Research Associate; and Jane Leemhuis and Joyce Crain, Secretaries.

This publication is one of four (4) products developed in this project. The other three publications are:

1. The National Directory of Selected Competency-Based Adult Vocational Education Programs.

2. Competency-Based Adult Vocational Education Programs: A National Survey.

3. Identification and Analysis of Competency-Based Adult Vocational Education Programs (Final Report).

Robert E. Taylor
Executive Director

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Chapter I

INTRODUCTION

Students in Adult Vocational Programs have varying goals, aptitudes, abilities, needs, and job or career preferences. The flexibility of competency-based education (CBE) allows the educational program to deal with these differences. Trainers and educators may best meet the needs of the adult population with individualized, job relevant, competency-based education. Individualized competency-based instruction based upon a job/task analysis allows the student to begin at her/his level and learn what is necessary to perform a particular job. Students progress at their own rate which is determined by demonstrated performance at a specified level of acceptance or competence under conditions approximating those on-the-job.

Although efforts are being made to incorporate CBE into adult education and training programs, little communication exists among the teachers, trainers, and course developers involved. The project, "Identification and Analysis of Competency-Based Adult Vocational Program ," of which this publication is a result, was an effort to assemble and disseminate information to improve that communication.

The Survey

This section provides a brief overview of the national survey which was conducted, and a description of Workshop objectives and activities. The survey, directly and indirectly, provided the major information base for Workshop planning. Most Workshop participants were involved at one time or another in the survey. A national survey was conducted to identify and describe competency-based adult vocational programs in education, business/industry, and government agencies. Nominations of individuals involved in CBE were obtained through contacts with leaders in State divisions of vocational and adult education. Business/industry/labor and government agency nominations were obtained from a mailing to American Society for Training and Development (ASTD) members. The training departments of selected firms from the top 500 companies listed in the May 1976 issue of Fortune magazine were also contacted. Announcements about the project placed in appropriate journals and newsletters included a request for the names of individuals involved in competency-based efforts. As a result of a literature search on competency-based education, key individuals mentioned in or contributing to the literature were contacted and asked for nominations. From the approximately 1,900 nominations received, 1,657 were selected to receive the survey.

The survey was developed by project staff after an extensive search of the literature. A National Panel of Consultants with expertise in the area of competency-based education met at CVE to resolve technical issues and revise the instrument. After revisions based on a pilot test in Minnesota and Ohio, a mail survey of the competency-based courses nominated was conducted. A total of 278 usable surveys were returned. Of these 57 exemplary courses and three exemplary programs were selected for inclusion in the National Directory of Selected Competency-Based Adu' Vocational Education Programs. Ten of these exemplary courses/programs were then studied in further detail through site visits and personal interviews with key personnel. Reports of these site visits are included in the report, Competency-Based Adult Vocational Education Programs: A National Survey. This report contains an in-depth description of the survey of which this section is an overview.

The Workshop

The National Workshop on Competency-Based Adult Vocational Instruction was held August 2-5 at The Center for Vocational Education to share project findings, including a range of exemplary competency-based adult vocational programs Objectives for participants in the Workshop were to:

1. Expand knowledge regarding the status of competency-based adult vocational programs.

2. Establish personal contact with individuals who are conducting exemplary competency-based adult vocational programs.

3. Share and exchange ideas with others from serving in both roles of "trainee" and "trainer" to the extent that individual backgrounds allow.

4. Develop an individual plan of action for applying what was learned in the Workshop.

5. Commit themselves to implement individual plans of action.

The six presentations in these Proceedings describing the exemplary programs mentioned above should be of particular interest to anyone involved in adult vocational education, either in the public or private sector. The presentations dealt with such issues as administration, implementation, course management, record keeping, and other concerns educators have with competency-based instruction. Several of the speakers incorporated slide presentations into their presentations, which could not be duplicated in the

Proceedings. Consequently, the length of the presentations varies. The project staff presented an overview of the survey results including: rationale, objectives, methodology, findings, conclusions and recommendations. This information will be of special interest to persons interested in the status of competency-based adult vocational education. Also, other members of the staff of The Center for Vocational Education reported on activities and resources of The Center related to competency-based education and adult vocational education.

Small group sessions in which the presenters served as resource persons offered participants the opportunity to interact with the presenters and one another. Unfortunately, these small group discussions could not be recorded and included in these Proceedings. These sessions were perhaps the most valuable aspect of the Workshop for many participants because they could deal with individual needs and interests.

Participants were provided individual work time to develop their own Individual Action Plans for using the information obtained during the presentations and small group sessions and from resource materials provided. The following four questions were addressed in the Individual Action Plans:

1. List the ideas, concepts, insights, or techniques which you learned that are related to your job.

2. Specify the situations, problems, or priorities to which each of the above may be applied in your job.

3. List the ACTIONS you can take to apply what you learned to the situation, problems, or priorities above.

4. Beside each of the actions listed, record your best-estimate of when it should be accomplished (month/day/year).

Participants were requested to submit the Individual Action Plans they developed to the project staff if they wished to have the plan published in these Proceedings. Selected Individual Action Plans are included in Chapter III.

The complete Workshop program is included in Appendix A. Seventy-two participants representing public and private adult vocational education attended the Workshop. A list of participants is included in Appendix B. A Selected Reading List used as a handout during the Workshop is contained in Appendix C. Finally, the highly positive final evaluation of the Workshop is contained in Appendix D.

CHAPTER II

COMPETENCY-BASED EDUCATION IN ADULT VOCATIONAL EDUCATION

This Chapter contains presentations by Robert E. Taylor, Louis H. Anderson, Cynthia K. Anderson, John Boulmetis, and Earl B. Russell.

THE CENTER'S INVOLVEMENT IN COMPETENCY-BASED EDUCATION AND ADULT VOCATIONAL EDUCATION

Robert E. Taylor, Executive Director
The Center for Vocational Education
The Ohio State University

It is a pleasure to welcome such a diverse and capable group of professional people from around the country, concerned with a problem of national significance, to The Center for Vocational Education. We hope that while you are here you will have an opportunity not only to accomplish your program objectives but perhaps to get acquainted with The Center and The Ohio State University.

A Growing National Awareness

I can't think of a more significant, timely, or appropriate topic for a national workshop than that of competency-based adult vocational instruction. Certainly when we look at national trends and needs, and when we look at new legislation and pending legislation, the significance and importance are there. In trying to reflect on this topic and this group, I drew on my own experiences. I'm certainly no historian, but as I viewed what has been the emerging national mentality or commitment to adult education, I tended to put it in a series of stages.

Early on we learned that adults could learn, that learning did not cease along with the K-12 kind of program. Next, we found and began to believe that adults wanted to learn. Then, as we entered a post-industrial society and dealt with the vast technological changes of post-World War II, we began to believe that adults must learn. Now, as we confront some of the implications of the lowering birthrate, and the demographic trends that result in some of our elementary schools standing idle, we see in effect an unused educational capacity that is available. We are beginning to realize that we have both the educational capacity and commitment to work with adults.

Perhaps in some instances we have not adequately addressed the kinds of skills and competencies required to work with the adult learner in the full range of situations. But I think the emerging interest, the capacity, and the commitment are there. If we consider the adult learner as a part of a broader socio-economic educational

complex in terms of policy, then we see a healthy reexamination of our national policy and commitment with respect to retirement, and perhaps an increasing awareness that the adult group, including the aging, constitute an underutilized human resource. Parallel that with an increasing concern nationally for the outcomes of education, the goals that we seek, and the increased interest on national performance testing.

Through activities such as the National Assessment of Educational Progress, we see that accountability has a lot to do with many of these concerns and interests. For example, there is pending before Congress an amendment to the Elementary and Secondary Education Act that would require a basic competency examination as a part of any high school program and separation process. Think about the constrained resources, the increasing competition, and take an intense look at how public funds will be invested and what the returns will be. We have to become increasingly concerned with educational productivity. How can we get more productivity, educationally speaking, out of our resources? Couple that with the increased emphasis on individualization and you have just a few of the major strands of political reality, of educational reality, that surround this workshop on competency-based programs in adult vocational education.

Whether employers, communities, and educational institutions plan for more effective employment and training of adults is one of the most important challenges that we face in the next decade. Again, if we consider the wisdom, the experience, the judgment, the skills that adults have, we know then that they constitute one of the most underutilized human resources that we have. If we consider our expanding economy, the potential exists for this group to continue to make both economic and educational contributions to our nation. The life expectancy today has extended to some 70-75 years. The Committee on Aging is making efforts to increase the retirement age. The adult group 25 or over includes approximately 125 million men and women. We know that the average age of our population is moving up due to a lowering birthrate and a rising life expectancy.

Preparing to Better Serve Adults

So clearly, one of the major challenges and opportunities of this nation, of its educational systems, of its business, industry, labor, and government agencies is to try to evolve a program that makes sense for the adult learner. This program should not only deal with the needs for occupational preparation and redevelopment, but also with some of the implications for career planning and for other associated developmental tasks that adult people are confronting. Certainly the aspects of leisure time and fulfillment/enrichment in life as a part of a balanced educational program are going to be among our concerns.

As we move in these directions we need to consider the implications for training programs. There is a need to more effectively plan for developing professional competencies for working with the adult population among administrators, teachers, counselors, and other associated personnel. We need to more adequately portray the opportunities and the implications for the adult learner, considering the changing demography of our population, to legislators, boards, and others who are concerned with policy.

When we are working with teachers and others in the educational system, we must focus not only on the kinds of competencies that are needed by adult workers, but also on the anxieties, stresses, and pressures that adults may be under as they compete with younger workers. Adult learners need to build confidence and to be given opportunities to consult with and have access to career planning and career development resources. Again, we need to try to capitalize on those middle and post-middle years to build on the skills, the judgment, and the productivity that those people possess.

As I look back on my own "methods" courses in college as an undergraduate, one of the key things that my professor emphasized that sticks with me is the importance of an apperceptive base for learning. Certainly, as we consider the adult learners' cumulative learning background, experiences, and judgment, we recognize a rich and apperceptive base there for learning and moving ahead.

Projects of The Center Related to Competency-Based Adult Vocational Education

I would like to take just a few minutes to share with you some of the activities that are going on here at The Center or have been completed that relate to competency-based education and adult vocational education. You will hear more about several of these projects later in the Workshop from other members of our staff.

One effort is the performance-based teacher education (PBTE) modules that we have been developing over the past several years. Some 100 PBTE modules have been developed cooperatively with a range of universities across the United States. Additionally, a resource guide for using the modules, a student guide for using the modules, and a guide to implementation of a performance-based program, including some publications on the state-of-the-art, have been developed. These modules initially grew out of a research project that was designed to identify those teaching competencies that were common to all of the vocational occupational areas. The original intent was to see if we could find ways to eliminate some of the redundancy and duplication in methods of undergraduate teacher education, and to determine some of the common kinds of experiences that all vocational teachers share. From that research base, we moved into the development of performance-based modules.

I think many of you are aware that the ERIC Clearinghouse for Career Education is located here. This Clearinghouse, in addition to serving the substantive area in its title, also includes the areas of vocational education and adult education. In the adult education field, as in vocational education and career education, we make contributions to the Resources in Education index, to the Current Index to Journals in Education, and prepare bibliographies and information analysis papers on timely and significant problem areas. The Clearinghouse also provides question answering service to the field and computer searchers of the ERIC system.

A recently completed project deals with the cooperative adult education program. This 18-month study examined cooperatively-sponsored adult education programs of state departments and business/industry/labor groups across the country. After visiting and examining a number of these programs, the project staff developed guidelines which I think will be useful in implementing similar programs.

Another project that should be of interest deals with competency-based materials for local administrators of vocational education. Considering potential expansion and some of the constraints that are now on universities and state departments with respect to field-based activities, the local director of vocational education and the local administrator of vocational education will be fulfilling an increasingly critical role in terms of leadership, planning, inservice education, evaluation, and so on. Out of this project came an identification of the essential competencies in that role and the development of some exemplary performance-based modules for administrators.

Over the past several years, The Center has been performing contracts for international labor unions and national contractor's associations. Two of these have dealt with the sheet metal and air conditioning industry for whom we have operated the National Training Fund University Center through support by both labor and management. Our focus here is to upgrade their apprentice program through instructor training, curriculum development, evaluation, and examination of the impact of technology on that industry and the resulting implications for preparing journeymen and maintaining their skills.

Another project was with the National Painting/Decorating/Drywall Apprenticeship Training Committee. In this project we developed a number of curriculum materials for use in their apprentice training program and trained the apprentice instructors in their use.

The Metrics Project, including the applications of metrics to approximately 75 occupational areas in ten clusters and three levels of adult basic education, was recently completed. The materials are now available. They have been exposed to the appropriate groups through some ten regional workshops that have been held around the country.

Another area that relates in a major way to one of the charges of the new vocational legislation is a project designed to develop a prototype system for delivering relevant military curriculum materials to public and private vocational education programs. It involves looking at how the vocational education community could positively exploit those curriculum materials that are available through the Department of Defense and appropriately apply them to ongoing vocational education programs, both in the public and private sectors. The Center is currently developing a model for dissemination of these materials nationally.

An area that has been of major concern to us has been a series of projects focusing on improving vocational education in the corrections field. I am pleased to see there are some representatives of this group at this Workshop. We have conducted studies for several states in terms of analysis of their ongoing programs of correctional education for the Federal Bureau of Prisons, and sponsored a number of national workshops for vocational education in this field.

Additionally, a project that is pending--but not yet negotiated--deals with trying to develop procedures whereby retired persons can make a contribution to ongoing occupational programs. Retired individuals can serve as advisors, as resource persons, and in other support roles to strengthen ongoing occupational programs. We are quite hopeful that this project will be funded so we can proceed.

Conclusion

Let me say in summary that we are committed to competency-based education and to adult vocational education. We think these are timely and appropriate directions to go. I am impressed by the tremendous range of talent that has been assembled for this particular Workshop. You have an exciting program ahead. We certainly wish you well and hope that your experience here will be both productive and useful.

ACTIVITIES OF THE U. S. OFFICE OF EDUCATION IN COMPETENCY-BASED ADULT VOCATIONAL PROGRAMS

Louis H. Anderson, Project Officer
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Washington, D.C.

I greatly appreciate the opportunity to come here and talk with you. It's seldom that I have an opportunity to get to many of the programs I monitor. I'm responsible for about 75 projects now all over the United States, and if I'm lucky I get to maybe 10-20 in a fiscal year. I'm glad to have the opportunity to come here to The Ohio State University.

I did not come here to make a speech of any description. I've brought a considerable amount of back-up material that I'm quite sure will be of some interest to you regarding what has been happening in competency-based programs over the years, what is happening this coming year, and what is possibly going to happen in fiscal year (FY) 78. We go back, in my experiences at USOE, as far as 1974. We have funded competency-based programs, even though they weren't all titled competency-based, but a lot of them involved competency-based materials and developed materials or curricula related to competency-based programs.

USOE Projects Related to Competency-Based Adult Vocational Education

Just to bring you up-to-date on what we have done, I will briefly describe these programs. I have information about many projects with me today and will leave it for anyone who would like to read about programs that have taken place in their state or locality and may have dropped through the cracks. This is something that worries me all the time. We constantly sit in Washington and fund programs. We get quarterly reports and a final report on them, but we don't always know who is going to use them afterwards, whether the programs are being used by some other training institution, some other state, some other unit of the local educational system, or whether they are just put on somebody's shelf and forgotten. The FY 74 programs are now closed out and materials developed are available from the institutions that did the R&D. Some materials have become part of that state's educational program. I will list a few of the competency-based programs that were developed in FY 74 in the following five categories: Curriculum Studies; Disadvantaged, Handicapped and Minority; Alternative Work Experience Programs; Guidance Counseling, Placement, and Student Follow-up Services; and Manpower Information and Systems for Education. They are:

California:	Competency-Based Work Experience: Exploration of Contract Programs
Kentucky:	Competency-Based Curriculum Development
New York:	Determination of Effectiveness of Competency-Based Program in Distributive Education
West Virginia:	Development and Implementation of an Individualized Competency-Based Curriculum in Vocational Education for Boone County, West Virginia

As we progressed, the competency-based concept became more prominent as far as the demand from the public was concerned, and in FY 75 we funded the following:

California:	The National Consortium for Research on Competency-Based Staff Development in Comprehensive Career Guidance, Counseling, Placement, and Follow-Through
Illinois:	A Competency-Based In-Service Education for Secondary School Personnel Serving Students with Special Needs in Vocational Education
Louisiana:	A Study for an Articulation of Competency-Based Curricula for the Coordination of Vocational-Technical Education Programs in the State of Louisiana
Maryland:	Discovery: A Computer-Based Career Guidance and Counseling Administrative Support System
Ohio:	Development of Competency-Based Instructional Materials for Local Vocational Education Administration
Virginia:	Developing Competenc -Based Training Materials to Meet the In-Service Needs of Local Vocational Education Administrators
Washington:	A Comparison of an Individualized Competency-Based Dental Assisting Training Program

In each of these years, we received approximately 370-390 applications from all over the United States. And, as you know, we lacked the money to fund all those projects. We had to evaluate applications based on their reaching standard scores set by a panel. We fund programs according to the level of the apportionment of that state. Some good programs had to go down the drain because there were too many from

that state and we couldn't fund all of them. This has been the big problem regarding procedures that were utilized in the last 2-3 years, but this procedure will change in 1978.

In FY 76, there were more competency-based projects. As you will notice, they have increased as the years have passed. Projects in FY 76 included:

Alabama:	Performance-Based Adult Vocational Education Program
Florida:	Development and Validation of a Competency-Based Pre-Service/In-Service Learning System for Vocational Teachers in the Implementation and Management of a Curriculum Delivery System for Individualizing Vocational Education
Iowa:	Common Interest Cluster Competencies Needed in Selected Occupational Clusters
Iowa:	Identification and Development of Competency-Based Curricula for Water and Waste Water Programs
Kansas:	Research, Development and Testing of a Competency-Based System of Instruction for Four Post-Secondary Agriculture Technical Programs in the State of Kansas
Maine:	Competency-Based Adult Vocational Education through Performance-Based Vocational Teacher Education: An Implementation Delivery System
Nevada:	Expanding Competency-Based Adult Vocational Education in Nevada
Ohio:	Development and Validation of a Competency-Based Instructional System for Adult Post-Secondary Special Needs in Entrepreneurship via the IDECC Instructional System
Ohio:	Identification and Analysis of Competency-Based Adult Vocational Education Programs (I think all of you have heard about this project!)
Pennsylvania:	Competency-Based Curriculum Development for the Mining and Related industries
Pennsylvania:	Identifying and Validating Essential Competencies Needed for Entry and Advancement in Major Agriculture and Agri-Business Occupations

Virginia:	Developing Competency-Based Individualized Instruction Modules for Owner/Managers of Small Business Firms
West Virginia:	Development of a Competency-Based Curriculum for Upgrading Water Treatment Technicians

In FY 77 we funded 16 projects in adult and post-secondary education. These programs were selected from 56 applications under Adult and Post-Secondary Education submitted for funding:

Alabama:	Competency-Based Adult and Post-Secondary Vocational Education Utilized in the Adult Performance Level Approach
Arkansas:	A Study to Follow Career Patterns of Adult Basic Education Completers
California:	Environmental Quality and Energy Conservation: Curriculum Model
California:	Life Skills and Job Success: A Project to Develop and Validate Competency-Based Modules to Teach Everyday Life Skills Crucial to Job Success
California:	A Management Plan to Link Vocational and Academic Education Programs
Hawaii:	Competency-Based Education Curriculum Guides for Merchandising and Marketing
Illinois:	Preparatory Education Alternatives for Public Policy and Financial Support
Indiana:	A Proposal to Describe and Evaluate the Impact of the 1976 VEAs Upon CETA Post-Secondary Vocational Education Programs and Organizational Linkage with Emphasis on the Utilization of CETA Title I
Indiana:	A Study to Identify, Describe and Evaluate Existing Methods of Linking Vocational Education at the Post-Secondary Level with CETA Programs in Business, Industry, Labor, and Adult Education
Kentucky:	Project CEBI (Credit for Education in Business and Industry): An Appalachian Employability Skills Project

New Jersey:	Linkage Strategies and Program Development in Post-Secondary Adult Vocational Education
Tennessee:	A Statewide Comprehensive Information and Referral System for Making Individuals Aware of Post-Secondary Vocational and Technical Education Opportunities
Tennessee:	The Development and Testing of Adult Vocational Education Programs
Texas:	A Unified Technical Concept--Phase II
Wyoming:	Rural Adult Vocational Education in Entrepreneurship

Other categories of programs funded for FY 77 in adult education were:

Equal Access and Opportunities

Sexual Stereotyping and Sex Bias

Education and Work Programs

Adult and Post-Secondary Vocational Education

Curriculum Management in Instructional Materials

Personnel Development for Vocational Education

Comprehensive Systems of Guidance, Counseling, Placement, and Follow-Through

Administration of Vocational Education at the State and Local Levels

Project Funding Procedures

Another thing I would like to call to your attention is the document, "Publication Resources." It describes the publication resources of government funding and tells which documents you can order from the Government Printing Office, where to write, who to write, and the approximate cost of these monthly or bi-monthly listings. "Publications Resources" indicates what the government wants in research or any other category. It will either be in the form of an RFP (Request for Proposal) or it may be in the form of a grant. It covers the Commerce Business Daily, the Catalog of Federal Domestic Assistance, the Annual Registry of Grant Support, Federal Register Index, Publications of the Foundation Center, the Foundation Directory, the Foundation Grant Index, the

Research Grant Index, and selected United States publications. It would be to your advantage to get this information for future planning which will come off in FY 78. There will be RFPs after October 1 in the Commerce Business Daily (CBD) that will request some type of training or research that the staff in the Office of Education feels is needed in the United States. Any non-profit organization is eligible to apply for these RFPs. Full instructions will be given in the CBD as to whom to contact, what they want, the criteria that will be used to evaluate it, and so forth.

Once an application comes in to us, and if the instructions that are listed in the Federal Register are followed, it is reviewed by a panel. We select three non-federal and three federal personnel to appear on these panels for each one of the different categories. In Adult and Post-Secondary Education I have six panelists--two of my panelists are from Alabama, one is from Ohio, and three are federal people. They review the proposals and report and compare their evaluations for each individual proposal. Once a final grade is achieved on an application, the USOE staff converts the raw scores to standard scores. The scores are then listed by highest score per state. Applications are approved up to the amount allocated for each state. Winning applicants are notified after Congress has been notified.

Adult Performance Level Education

Jim Parker, in our Bureau in adult education, asked me to tell you the result of an adult performance level (APL) survey completed in November, 1974. It indicates that less than half of the adults in this country are proficient with life situations requiring occupational knowledges and skills. These findings are impacting quite heavily on the programs administered under the Adult Education Act. At least 10 states are developing competency-based programs in employability and occupational knowledge specifically, and many others are developing these areas as components of more comprehensive curriculum efforts. Overall some 44 state adult education programs have invested $5 million in 150 special programs concerning functional competency for adults. This past year the Vocational Educational Research Division in the Division of Adult Education developed a joint funding priority for projects to apply adult competency education research and strategies to adult vocational education programs. Projects meeting this priority have been funded in Tennessee, Alabama, Texas, Kentucky, and Los Angeles. You will be hearing more about some of these later in this Workshop.

OVERVIEW OF THE NATIONAL SURVEY OF COMPETENCY-BASED ADULT VOCATIONAL INSTRUCTION

Cynthia K. Anderson
John Boulmetis
Earl B. Russell

Background of the Study
(Cynthia K. Anderson)

As Bob Taylor and Louis Anderson pointed out earlier, competency-based education has received widespread attention in recent years. There is evidence of this interest in the performance-based teacher education movement and several state mandates for competency-based education. The states of California, Florida, Michigan, and Oregon, to mention a few, have shown a very active interest in this area. In addition, I am sure many of you are familiar with the Vocational-Technical Education Consortium of States (V-TECS) catalogs from which course developers and teachers can use the performance objectives, criterion-referenced test items, and performance guides to develop competency-based courses in many occupations. Later in this workshop Norma Brewer will be giving a presentation on the performance-based adult vocational education (PAVE) project in Alabama. The PAVE system is designed to assist the instructor step-by-step through the process of utilizing the research-based V-TECS catalogs to provide performance-based instruction to the adult learner.

Competency-based education (CBE) has been viewed as a means of improving quality and accountability in all education. Although performance-based teacher education has received most of the attention, the CBE concept is applicable to all areas of education. To recap what Dr. Taylor mentioned earlier, it's a response to demands for accountability and relevance by the public. Also, educators have an increased awareness of performance objectives, evaluation of student outcomes, and individualizing instruction.

Rationale and Objectives

Our rationale in this project was that competency-based education is particularly suited to adult learning and adult vocational education. Adults have acquired occupational skills and knowledge beyond the formal school setting. In a competency-based course, they can demonstrate competency and be given credit for skills they already possess without taking unnecessary coursework. As a result of our expanding technology and the need for continuing education, more and more people are involved in adult vocational education. Providing quality instruction in these adult programs is a key priority at this time.

Little has been documented and shared among individuals involved in various efforts to use CBE in adult education and training. Because the

development and management of competency-based programs is both expensive and time consuming, some vehicle for sharing and exchanging information about existing programs was needed. Recognizing the importance of competency-based instruction for adults, the United States Office of Education sponsored this project to achieve the following objectives:

(1) Identify and describe characteristics of specific competency-based adult vocational education programs in public and private vocational education. The private sector includes proprietary schools and business/industry/labor training programs. In the public sector, vocational schools, post-secondary schools, secondary adult schools, adult skill centers, and government agency training programs were involved.

(2) Provide a vehicle for adult vocational program developers and operators to "share and exchange" and "train and be trained" in the competency-based education concept. This Workshop and the four (4) products which will be available at the end of the project will provide that vehicle.

(3) Provide the profession with information and supporting data on the status of competency-based education in adult vocational education programs sponsored by business, industry, labor, and education so that developers and operators will have a readily available source of assistance. Such information will be available through the project's publications.

Products

The products resulting from this project are:

(1) The National Directory of Selected Competency-Based Adult Vocational Education Programs. The Directory contains descriptive information on selected programs and courses from around the country, along with the name of the contact person, telephone number, and some demographic program information. For the Directory, we selected 60 programs and courses identified in the survey as possessing the descriptors listed in the the first part of the survey to a relatively high degree, and which also were rather thoroughly described in the "Directory Entry" section of the questionnaire.

(2) Proceedings of the National Workshop on Competency-Based Adult Vocational Instruction, August 2-5, 1977. These Proceedings will be published so that people who could not attend the Workshop can benefit from the ideas presented and developed here. The Individual Action Plans that you will be developing may be included in the Proceedings, if you give us permission.

(3) Competency-Based Adult Vocational Education Programs: A National Survey will include detailed information about the survey background, methods, and results.

(4) Identification and Analysis of Competency-Based Adult Vocational Education Programs (Final Report) will include information about the entire project. This Report will contain information and supporting data on the status of competency-based adult vocational education today.

Review of the Literature

One of the first things that we did at the beginning of the project was to search the literature, review it, and find out just what was written about competency-based vocational education for adults. We found very little. There were numerous general articles about competency-based education, but few authors specifically addressed competency-based adult vocational education--that narrows it down quite a bit. (We selected a few key articles which are included in your notebooks; also included is a Selected Reading List.) Perhaps the most appropriate article we found was by James Hertling entitled, "Competency-Based Education: Is It Applicable to Adult Education Programs?" In it he states that the competency-based approach has become increasingly interesting to educators in recent years; "It is adaptable to all forms and all levels of education, including adult education programs."

A key reference, Delivering Competency-Based Vocational Education, is among the Workshop materials you will receive later. This book was published by the Florida Department of Education. Another very useful document found in the literature search was the Handbook for Vocational Instructors Interested in Competency-Based Education, written by Laura Berger and Judith Lambrecht of Minnesota. Although the document is not included as a handout, it is available from the Minnesota Instructional Materials Center. The Handbook includes a list of features and benefits that the student could expect from a competency-based vocational program. Some of these features may be useful to point out and to reinforce just why we are all involved in competency-based education.

(1) Instructional objectives are made clear to students, teachers, and the public. This came up again and again in the literature; that everyone involved in the education process be aware of the objectives and goals of instruction.

(2) Student progress is monitored closely in relation to the stated objectives, especially in the early stages of learning, to perform a task, and continuous diagnosis of difficulties and opportunities for remedial instruction are possible.

(3) There is an opportunity for variation among learners with respect to the objectives they may pursue at a given time,

the mode of instruction used, and the materials used for learning. Different learners learn by different methods. The competency-based approach allows various methods of teaching to be used.

(4) Time may be allowed to vary among students for the attainment of certain objectives, thus permitting slower students to take more time to reach the stated objectives and for faster students to proceed more quickly.

(5) Different instructional goals may be set for different learners depending upon their occupational interests and abilities within the program area.

(6) Emphasis is placed on the development of minimal levels of competency by all students in job tasks, thus promoting the acquisition by students of marketable job skills. Opportunity is provided for students to develop their competencies beyond minimal levels so they may optimally utilize their individual potential.

(7) The relationship of identified competencies to job requirements is more easily depicted when the job itself has been the source of the task identification. If the student thinks the course is relevant, he/she will perform better in that course.

(8) Students may be encouraged to assume more responsibility for their instructional progress when the completion of a program is dependent largely on the demonstration of specified competencies and greater latitude is permitted with respect to the means used to attain these competencies.*

In the literature search, we found many articles and books that dealt with the nature of competency-based education or the definition of competency-based education. Several key elements were common to most of the definitions. These were individualized instruction, based on job or task analysis, emphasis or exit requirements rather than entrance requirements time held variable with achievement held constant, criterion-referenced testing, performance objectives, and students held accountable for their own progress. We considered these key elements in the literature, as well as advice from our Panel of Consultants, in establishing the criteria for the survey. Criteria for Describing and Assessing Competency-Based Programs, by Burke, Houston, Hansen and Johnson was particularly useful in identifying the criteria (see Selected Reading List).

We found the ERIC Clearinghouse system very useful. On Friday, Dr. Bernie Moore of our staff will be giving you a short presentation about the Clearinghouse and how you can use it in your own literature

*Selected from Laura J. Burger and Judith J. Lambrecht, Handbook for Vocational Instructors Interested in Competency-Based Education (Minneapolis, MN: Minnesota Research Coordinating Unit for Vocational Education, 1974), pp. 3-4.

searches. You will receive more information about ERIC then.

Exhibit A is a list of some selected comments about CBE found in the literature. I thought it would be interesting for you to examine what different authorities have said about competency-based education.

Methodology
(John Boulmetis)

Population-Sample Identification

The identification of the population and sample for the survey was carried out in three stages. In Stage I we made initial contact with possible leads who were believed likely to have information on programs. In Stage II we contacted nominees designated as administrators to assess their appropriateness and interest. In Stage III we selected the sample and mailed the survey.

Stage I. The population originally approached in order to obtain nominees to participate in our survey was divided into public and private sectors. An extra effort was made to contact the private sector, because we had a hunch that the private sector might have been into competency-based instruction to a greater degree than the public sector.

Consequently, approximately 600 people in the public sector and 1,000 people in the private sector were contacted. This original contact was to determine if they knew of competency-based adult vocational or training programs occurring in their professional field that we might contact in order for them to be included in our survey.

In the public sector, among the types of contacts made were state directors of adult education, state directors of vocational education, and post-secondary vocational education directors. People contacted us in response to project announcements in professional journals and newsletters, including the Centergram, which asked for nominations. We also contacted individuals in various government agencies in Washington, D.C. to find out if they could refer us to appropriate CBE adult program people.

In the private sector, we contacted a random sampling of people from the American Society for Training and Development (ASTD) membership list, all ASTD chapter presidents (with a request to "spread the word" to their memberships by requesting their participation), 100 companies from the Fortune 500 list believed likely to have training programs, the National Association of Trade and Technical Schools (NATTS; an organization of private, proprietary schools), a select group of people from the National Transportation Apprenticeship Training Council (NTATC) and the Maritime Trade Advisory Board (MTAB), a selected group of people from the health field, and a number of miscellaneous contacts that we gleaned from staff here at The Center.

Stage II. After receiving approximately 1,900 nominations from the original contact persons, we sent a letter to approximately 350 nominees designated as administrators asking whether or not, in fact, they were conducting competency-based instructional programs. They were asked to return a pre-paid postcard saying whether or not they would like to participate in the study, and if so, how many instructor survey forms should be sent to them. A random sample of 15 non-respondents to the postcard mailing was telephoned to determine why they had not responded. The findings of this telephone follow-up are shown in Table 1. In addition to affirmative postcard responses, the remaining some 1,550 nominations were placed in the pool for final sample selection.

TABLE 1

FINDINGS OF THE TELEPHONE FOLLOW-UP OF POSTCARD NON-RESPONDENTS[a]

Reasons for Not Returning Postcard	Number	Percent
Never Received the Letter	5	33.3
No CBE Courses	4	26.7
Passed Letter on to Subordinate	2	13.4
No Longer at Address	2	13.4
Not Sure Whether CBE	1	6.6
Not Reachable	1	6.6
Totals	15	100.0

[a]As of date of follow-up, 189 postcards had been returned.

Stage III. In this stage, we sent the survey itself to those nominated, to those who had responded affirmatively to the postcard mailing, to ASTD chapter presidents, and also to the people who contacted us as a result of announcements in journals and newsletters. Among the nominations described earlier, we randomly eliminated some in instances where more than one person was named in the same department of a school or other training agency. Otherwise, all nominations were used.

Instrument Development

The procedures used to develop the data collection instrument for this project will be described in five major steps. The first through the third steps consisted of drafting instruments and having consultants react to the drafts. The fourth step was the pilot test of the instrument. The final step was a refinement of the instrument by the project staff into the final copy.

Step I. The development of the survey form required a fairly extensive process that began early in the project. The literature was reviewed extensively to determine current concepts in competency-based instruction and the criteria which should be met in a competency-based program. We also consulted with members of the Competency-Based Instruction (CBI) and Performance-Based Teacher Education (PBTE) project staffs operating here at The Center to capitalize on work already done. Early drafts of the instrument were developed and revised during this period by project staff.

Step II. In this step, we undertook a more rigorous revision of our instrument by asking a select group of consultants who are staff members here at The Center to review it. These people possess expertise in CVE and PBTE. Next, we sent a revised draft to two outside consultants who are specialists in competency-based vocational programs. The next draft resulting from these external inputs was delivered to a select group of private sector trainers who were quite instrumental in helping us word and structure the instrument so that it would appeal (hopefully) to the private sector.

Step III. In this step, we selected our National Panel of Consultants:

Hazel P. Brown, President
Harry Lundeberg School of Seamanship
Piney Point, Maryland

Ben A. Hirst, Jr., Executive Director
Vocational-Technical Education Consortium
of States (V-TECS)
Southern Association of Colleges and Schools
Atlanta, Georgia

Chester S. Januszewski, Project Manager
Functional Planning
Western Electric Company
Bell System Training Center
Dublin, Ohio

John R. Kobe, Adult Vocational Director
Suburban Hennepin County Area Vocational-Technical Centers
Minneapolis, Minnesota

Marie L. Piekarski, Coordinator
Program Planning and Development
Community College System
University of Kentucky
Lexington, Kentucky

Bernardo R. Sandoval, Assistant Director
Manpower Program Development
Los Angeles City Unified School District
Los Angeles, California

Lucille E. Wright, Educational Specialist
Division of Vocational Education
Cleveland State University
Cleveland, Ohio

These people were selected from approximately 35 potential Panel members. They were selected because of demonstrated knowledge of competency-based programs, the diversity of agencies represented, and geographic distribution. We spent a day reviewing what at this time was a fairly refined draft of the instrument with this Panel here at The Center, and came up with several important refinements in the instrument. (Other project activities were reviewed with the Panel as well, and several suggestions were obtained and implemented.)

Step IV. The next draft of the instrument was the pilot test version. We selected 15 programs in Ohio and Minnesota to act as pilot test sites. This pilot test was conducted to make sure that teachers understood what we were trying to find out, and also to determine the instrument's appropriateness in obtaining the kind of information we needed.

Step V. When the pilot test was completed and the comments from the pilot test respondents analyzed, we had the inputs needed to finalize the instrument. Last-minute graphic details were completed, typing was done, the instrument was printed, and we checked off a major milestone in the project!

Data Collection

We sent the survey to 1,657 people that we selected to be in our sample. Approximately 10 days into the survey, we sent a reminder letter asking prospective respondents to complete and return the survey form. After another week a random sample of 98 nonrespondents were telephoned to see why they hadn't as yet responded. (See Table 2).

We set a tentative cut-off date approximately two months into the survey, and began coding the surveys to prepare them for data analysis. The breakdown of contacts and responses from the private and public sectors was particularly interesting. (See Figure 1).

Data Analysis

Next we began our data analysis. Section I of the instrument contained the 19 descriptors which we developed to assess an exemplary program in competency-based instruction. In Section II, we collected a good deal of demographic information which we felt was important to investigate relative to certain variables. Analyzing the data for relationships among the several questionnaire items could provide key

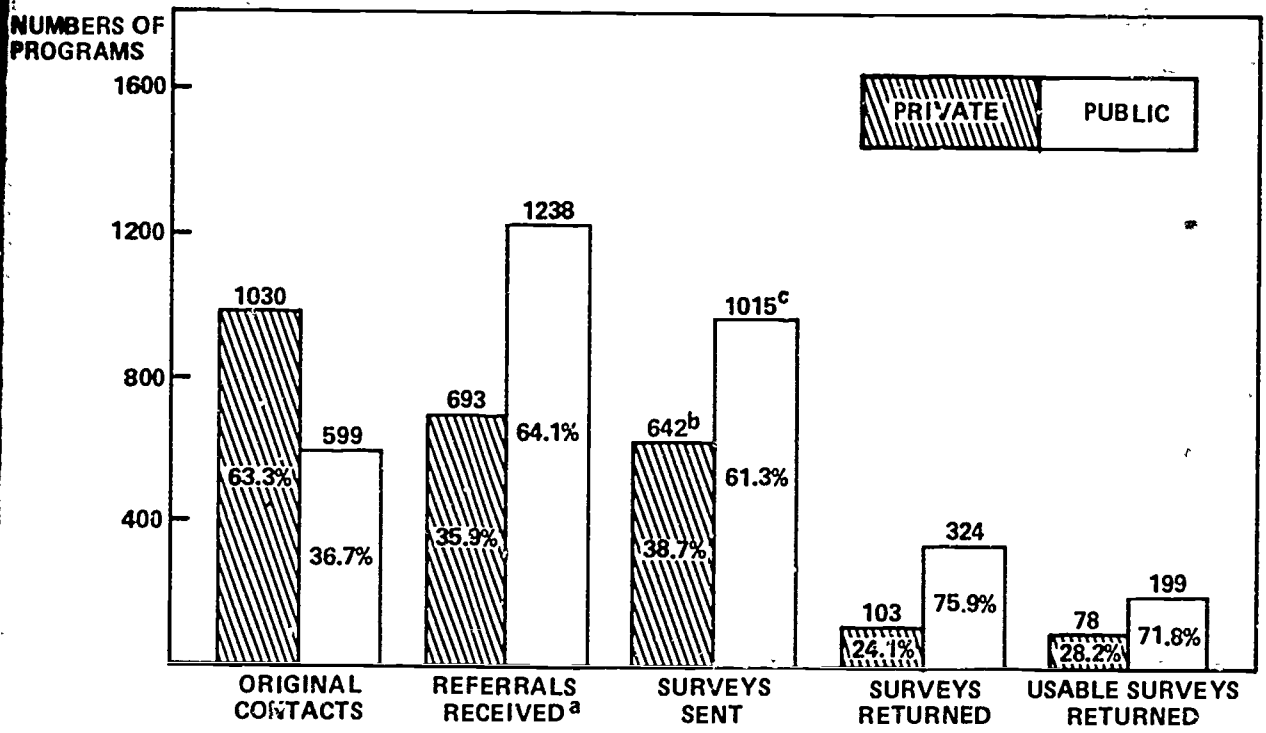
TABLE 2

FINDINGS OF THE TELEPHONE FOLLOW-UP
OF THE SURVEY NON-RESPONDENTS[a]
(n=98)

Responses to Telephone Call	Number	Percent
Survey is in the mail, being completed, passed on to subordinate or received during follow-up	35	35.8
Person unreachable (on vacation. no phone, no answer, etc.)	20	20.4
Person never returned call after two tries	14	14.3
Program/course not CBE	10	10.2
Person no longer employed in program	6	6.2
Person did not receive the survey (sent another)	5	4.6
Program/course not adult education	3	3.1
Program/course degree granting	2	2.1
School out of business	1	1.1
No time to complete survey	1	1.1
Respondent non-English speaking	1	1.1
Totals	98	100.0

[a] As of date of follow-up, 232 usable surveys had been received.

indicators of what is a good (or bad) program in competency-based instruction. Section III of the instrument was the format for the description that would be included in the National Directory. (In the instructions, we asked that the respondents make their comments



[a]THESE NUMBERS MAY INCLUDE SOME DUPLICATES SINCE MORE THAN ONE PERSON MAY HAVE REFERRED A PERSON OR PROGRAM.

[b]THIS NUMBER INCLUDES ASTD CHAPTER PRESIDENTS.

[c]THIS NUMBER INCLUDES PROGRAMS CLASSIFIED "OTHER."

FIG. 1. CONTACTS AND RESPONSES FROM THE PRIVATE AND PUBLIC SECTORS

as complete and carefully written as possible. However, many of the responses were either in fragments or one-word answers. Consequently, many of the Directory entries had to be thoroughly edited and, in some cases, revised by respondents.)

We first performed a simple frequency count on all of the items in the survey and computed percentages, means, medians, and other descriptive statistics. Next we compared Section I with Section III to see if there was consistency between the two sections of the survey. We also cross-tabulated Section I with selected items in Section II of the survey. Chi square analyses were used here. Also, comparisons of the public and private sectors on selected variables were performed using chi square and t-tests. Finally, standard correlations, a regression analysis, and a canonical correlation of Section I with Section III were performed to assess the relative strength of each of the 19 descriptors in predicting strong adult vocational CVE programs. I think what we found out will interest you!

Findings, Conclusions, and Recommendations
(Earl B. Russell)

In the time available, I can do no more than provide an overview of our major findings, conclusions and recommendations. I hope you will get a copy of the complete survey report to fill in the gaps in what I report here.

Project Findings

Stated briefly, the question we were trying to answer was: What are the characteristics of specific competency-based adult vocational programs in both the public and private sectors? We have some interesting and useful information regarding these characteristics.

First of all, to give you a better idea of the kinds of responses we received, Figure 2 shows the types of facilities represented. About 28 percent are in the private sector and about 72 percent in the public sector.

The categories of course titles that were reported in the survey reveal something we had suspected. Most courses reported were in the trade and industrial area. On the other hand, very few programs that may be defined as competency-based adult vocational education were found in agriculture, home economics, and distributive education. Business and office education had a relatively large proportion; health occupations was moderate. The miscellaneous category contained management training, instructor training, and other kinds of courses that don't fit into typical designations of service areas in vocational education, and a couple of instances of comprehensive programs containing

competency-based courses in all vocational education service areas (see Table 3). John Kobe and Bill Knaak will be telling you more about those large-scale programs later in this Workshop.

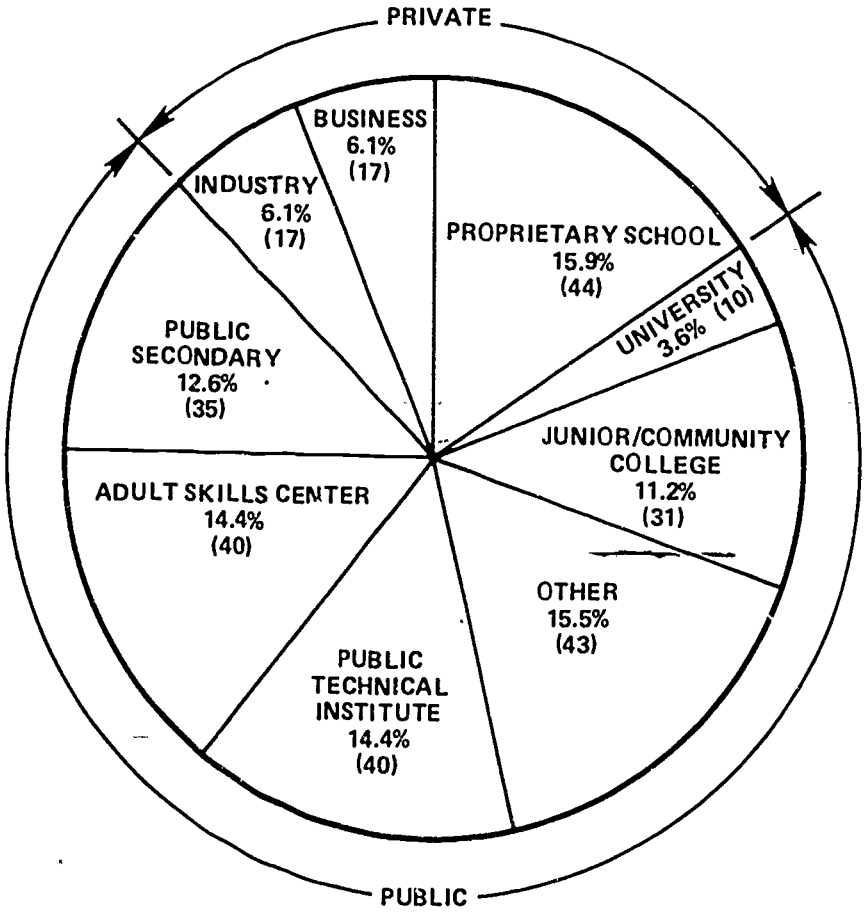


FIG. 2. TYPES OF FACILITIES IN WHICH COURSES WERE OFFERED (n=277)

Some data from Section II of the survey will be reported now.

Duration of courses. As you can see in Table 4, the range is wide. The median number of minimum hours is about 140; the median of "average" hours is about 160; the median of maximum hours is about 220. The range went from 0 (completely open entry/open exit) to over 9,000 hours! Keep in mind though that the predominant course duration was around the median.

Evidence presented in the narrative of Section III suggested that the claim for open entry/open exit may be somewhat exaggerated. About 40 people did support the claim that they were completely open

TABLE 3

CATEGORIES OF COURSE TITLES REPORTED

Service Area	Number	Percent
Agricultural Education	2	0.72
Business and Office Education	61	22.02
Distributive Education	7	2.53
Health Occupations	33	11.91
Home Economics	3	1.08
Trade and Industrial Education	147	53.07
Miscellaneous	24	9.67
Total	277	100.00

TABLE 4

DURATION OF COURSES IN HOURS

	n	Mean	Median	s.d.	Range
Minimum Hours	166[a]	515.8	140.5	833.9	1-8,000
Average Hours	170[a]	545.1	160.5	947.6	2-8,000
Maximum Hours	162[a]	658.2	220.5	1,111.9	3-9,000

[a]There were 80 respondents (29 percent of the total) who reported their programs were completely open entry/open exit.

entry/open exit. Others gave inconclusive or contradictory evidence on this point. One thing you need to be alerted to is that people probably tended to overrate their programs in Section I of the questionnaire, perhaps due to social pressures or institutional pressures to appear "good." Who readily admits to not having a "competency-based" program? One could imply from such an admission that the program is "incompetency-based"! Right?

Competencies and terminal performance objectives. If there was any place in the questionnaire where there were problems with terminology, it was with respondents' understanding of the terms competencies, tasks and terminal performance objectives. (The glossary of terms we provided did not provide the "standardized" view of these terms as well as we had hoped.) We have instances of complete reversals of numbers, understandably I think because the terms are not uniform. For example, some people reported as few as six tasks having been identified in the job analysis, and for that same job, based on those six tasks, several hundred terminal performance objectives. Other people reported hundreds of tasks identified, and maybe 6, 8, 10, or 12 terminal performance objectives. Because of such extreme reporting, the meaningful figure in Table 5 is the median rather than the mean. The data do reflect what would be expected of the entire sample of 277, as a group. Generally, there are more competencies (tasks) than terminal performance objectives in a course.

TABLE 5

COMPETENCIES (TASKS) AND TERMINAL PERFORMANCE OBJECTIVES REPORTED FOR COURSES

Item	Mean	Median	Range
Competencies (tasks) identified for course (n=233)	72.0	31.2	1-999
Terminal performance objectives, based upon competencies (tasks) included in course (n=216)	59.6	23.5	1-870

Enrollment by sex. Female enrollments were reported in 209 courses and males were enrolled in 228 courses. The median female enrollment was about 16 and the median male enrollment was about 22. Individual enrollments by course titles revealed that the stereotypes we all observe certainly were present. Women tended to be in the traditional female occupations and the men tended to be in the traditional male occupations, even though a large majority of the courses

identified in the survey had both female and male enrollments.

Advisory councils. The concept of having an advisory group of technicians, experts, representatives of certain clientele, and so on, was strongly supported. In the public sector, 78 percent of the programs reporting had active advisory councils, and 46 percent of the programs in the private sector did. The extent of involvement of advisory committees in the private sector was to me, a surprising but pleasing finding.

In terms of the types of members on the advisory panels in both the public and private sectors, the public sector had a significantly higher percentage of members from each of those groups listed on the survey than did the private sector in every category except private proprietary school representatives. It seems that private sector people mainly utilize colleagues or input from proprietary schools. But very few private sector training efforts involve union people on advisory committees--only five percent of the training programs in the private sector involve union people compared to 20 percent in the public sector.

Placement and follow-up. Another interesting comparison between public and private competency-based adult vocational programs is that the groups were virtually identical in their use of a placement program. Sixty percent of the public programs and almost 62 percent of the private conducted placement programs. This was surprising at first because I thought when the private sector provided employee training for their own people, that nearly all firms had a systematic placement effort to assure on-the-job application of training. However, recalling that the private sector in this study included proprietary schools, it is likely that many of them do not have placement programs. This could account for the similarity between sectors.

In terms of follow-up systems for program or course completers, the difference isn't significant. A somewhat greater proportion of the private sector reported having a follow-up system than the public sector.

Months of operation. Another comparison between public and private sectors was on the question of whether the program operates year-round versus selected months of the year. In the public sector 47 percent of the adult programs operate year-round compared to 74 percent in the private sector. There was also a tendency in the private sector for several courses to be offered for only one or two months, whereas in the public sector courses generally were offered for longer periods of time.

Course descriptors. In Section I of the questionnaire, we did an analysis of ratings on the 19 competency-based course descriptors. These descriptors were divided into two categories describing (a) the structure of the course and (b) terminal performance objectives.

As you can see in Table 6, the descriptors which are "Definitely possessed" by the largest number of courses were items 1, 3, 4, 7, 10, 11, and 18. However, in my view, these are not as noteworthy as those descriptors most frequently rated as "Does not possess, unusable, or not applicable," because these latter items apparently are the most difficult descriptors to implement. Therefore, it seems only the relatively more exemplary courses would possess these more complex but necessary descriptors. For example, items 2, 12, 13, and 15 were the descriptors most commonly rated "Does not possess," and it seems to me these items are more at the heart of CBE than many of those frequently rated "Definitely possessed."

TABLE 6

PERCENTAGE OF RESPONSES AND MEANS OF RATINGS
OF COMPETENCY-BASED DESCRIPTORS
(n = 277)

	Definitely Possesses (1)	Somewhat Possesses (2)	Does Not Possess, Unusable or Not Applicable (3[a])	Mean	s.d.
A. Structure of Course					
1. Learners are held responsible for meeting stated performance objectives	234 84.5%	39 14.1%	4 1.4%	1.17	.41
2. Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives	92 33.2%	85 30.7%	100 36.1%	2.03	.83
3. Learners know the measures for which they are held accountable	225 81.2%	47 17.0%	5 1.8%	1.21	.45
4. Instruction is segmented into manageable units, each containing related job skills	231 83.4%	38 13.7%	8 2.9%	1.20	.46
5. Learners are responsible for achieving the competencies as opposed to clock hours of instruction	178 64.3%	69 24.9%	30 10.8%	1.47	.68
6. Learner performance is recorded as each objective is achieved	195 70.4%	57 20.6%	25 9.0%	1.39	.65
7. Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements	222 80.1%	41 14.8%	14 5.1%	1.25	.54

TABLE 6 --Continued

	Definitely Possesses (1)	Somewhat Possesses (2)	Does Not Possess, Unusable or Not Applicable (3[a])	Mean	s.d.
8. Competencies are derived from a task or job analysis of the particular job	198 71.5%	65 23.5%	14 5.1%	1.34	.57
9. Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used)	195 70.4%	54 19.5%	28 10.1%	1.40	.67
10. Continuous evaluation and feedback to the learner is provided	225 81.2%	47 17.0%	5 1.8%	1.21	.45
11. Individual learner competence is determined by individual learner performance	232 83.8%	38 13.7%	7 2.5%	1.19	.45
12. Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained	172 62.1%	49 17.7%	56 20.2%	1.58	.81
13. Instruction offers learning alternatives for learners (i.e., different approaches)	116 41.9%	112 40.4%	49 17.7%	1.76	.73
14. Instruction specifies media to be used to accomplish objectives	192 69.3%	69 24.9%	18 5.8%	1.37	.59
15. If a learner does not achieve a learning task, a different method of instruction is provided or suggested	114 41.2%	116 41.9%	47 17.0%	1.76	.72
8. Terminal Performance Objectives					
16. Objectives describe the conditions under which the learner will be expected to demonstrate the level of competency	188 67.9%	75 27.1%	14 5.1%	1.37	.58
17. Objectives describe the level of competency or standards (set by business or industry) to be demonstrated	196 70.8%	59 21.3%	22 7.9%	1.37	.63
18. Objectives describe the tasks to be learned	225 81.2%	46 16.6%	6 2.2%	1.21	.46
19. Objectives are structured in a sequential order or in order of task difficulty	166 59.9%	78 28.2%	33 11.9%	1.52	.70

a Response categories 3 (Does Not Possess) and 4 (Unusable or Not Applicable) were combined since both collected, in effect, the same data.

Next, these items were examined to detect any important differences between the public and private sectors on them. Table 7 indicates significant differences between the sectors on three items (12, 13, and 15). On each of these items, the public sector courses approached "definitely possessed" more closely than private sector courses. The public sector has a decided edge on these items, and as I just indicated, these items appear to be fundamental to high quality competency-based adult vocational courses.

TABLE 7

SIGNIFICANT DIFFERENCES BETWEEN THE PUBLIC AND PRIVATE SECTORS ON THE 19 DESCRIPTORS
(n = 277)

Sector	n	Mean	Standard Deviation
12	Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained		
Private	78	1.90	.91
Public	199	1.46	.73
$t = 4.21$; $df = 275$; $p < .000$			
13	Instruction offers learning alternatives for learners (i.e., different approaches)		
Private	78	2.03	.76
Public	199	1.65	.70
$t = 3.89$; $df = 275$; $p < .000$			
15	If a learner does not achieve a learning task, a different method of instruction is provided or suggested		
Private	78	1.96	.73
Public	199	1.68	.71
$t = 2.97$; $df = 275$; $p < .003$			

Responses to Section III questions. As John Boulmetis explained earlier, the primary purpose of the six open-ended questions in Section III of the questionnaire was to obtain course descriptions for the National Directory of Selected Competency-Based Adult Vocational Education Programs. The six questions were:

(1) How were tasks identified in the job analysis?

(2) How were performance objectives developed and validated?

(3) How is instruction delivered?

(4) What is the nature of student testing?

(5) What is the nature of course evaluation?

(6) What is the nature of the support system of your instruction?

We again compared the public and private sectors on the extent to which their responses to the six questions in Section III differed. Since these were open-ended questions, we assigned weights to the responses for data analysis. We gave them a 1 if support was particularly strong, a 2 if there was moderate support of that feature, and a 3 if there was very questionable or no evidence of support. In analyzing those weights, there was only one question on which the groups differed significantly: delivery of instruction. In this case the support in the public sector was stronger than it was in the private sector, and the trend was in favor of greater strength in the public sector on four of the other questions.

This was another unexpected finding. In this survey public sector adult vocational programs appear more advanced. But we suspected that the private sector had been into competency-based training for a longer period of time and was more sophisticated. The data across all our analyses suggest just the opposite--that the public sector has stronger evidence of competency-based adult vocational programs than does the private sector.

Chet Januszewski, a member of our Consultant Panel from industry, raised a question with us about the incentive for the private sector to respond to this survey in the first place. What's in it for them? We attempted to make the case that it was the same as for the public sector--a chance to learn what other people are doing, to share information back and forth, and to get recognition for what is being done. But perhaps these incentives were not as compelling for respondents in the private sector. There was evidence in some cases that the private sector did not want to tell how they were conducting training, because it was proprietary information. To put a description of their training in print and have it documented might give a competitive edge to some other firm. So it could be that many private sector programs were not reported for fear of releasing private information, whereas in the public sector that would not be of particular concern.

Therefore, even though evidence now suggests the public sector is ahead in the area of competency-based adult vocational programs, these factors in the private sector should be kept in mind.

Statements from Section I related to Section III. We did an analysis of the 19 statements in Section I which are most closely related to the Section III descriptions of competency-based courses. Six of the 19 statements were significantly related to the total score on those six questions, even though the correlations are relatively low. These findings, shown in Table 8, are important because the six descriptors are most closely associated with courses which may be considered strongly competency-based.

TABLE 8

DESCRIPTORS FROM SECTION I RANKED BY DEGREE OF RELATIONSHIP WITH TOTAL SCORES FROM SECTION III

Descriptor	Correlation with Total Score[a]
2. Learners are pre-assessed upon entry to determine learners' skills and objectives to be achieved, rather than all learners covering the same objectives	.21**
4. Instruction is segmented into manageable units, each containing related job skills	.19**
12. Each learner is allowed to proceed to subsequent instruction as quickly as performance objectives are attained	.18**
6. Learner performance is recorded as each objective is achieved	.17**
7. Greater emphasis is placed upon exit requirements (proficiency) than upon entrance requirements	.17**
9. Student assessment criteria are based upon competencies (i.e., criterion-referenced testing is used)	.13*

[a]Pearson r reported with 243 degrees of freedom.

* $p < .05$

** $p < .01$

The regression analysis showed that we accounted for only 14 percent of the variance in the competency-based program by the variables we analyzed. That means that 86 percent is unexplained, and we think the major reason for this is respondent error in not documenting in Section III what was claimed in Section I. In other words, Section I tended to look very strong; the ratings tended to be high, but the evidence provided in Section III was often weak. So there was no way to capture a large proportion of the variance with this kind of reporting.

In this regard it should be emphasized again that we intentionally made the survey difficult. The reason for doing so was to discourage respondents from making exaggerated claims and trying to seek recognition when their courses may not possess the competency-based features. I think this strategy was effective because if we had not made it difficult, we would have received many marginal responses. As it is, we have evidence of validity in the survey which we most likely would have missed if we had used a simple approach.

Some additional information from the six questions in Section III provides some insight into the nature of competency-based courses identified in the survey. We ranked those questions in the order of strength of the assigned weightings. The question regarding the nature of student testing was the highest ranking (strongest) question of those six. Delivery of instruction was second in order of strength. Development and validation of performance objectives was third. The nature of course evaluation was fourth. Identification of tasks was fifth. The nature of support system was last; it had the weakest ratings.

The more complex analysis, canonical correlation, provided additional insights into the nature of competency-based adult vocational courses. Briefly, stronger competency-based adult vocational courses were superior in the way instruction is delivered and in the nature of student testing and course evaluation. These courses are also characterized by allowing learners to proceed as quickly as objectives are attained, not demanding clock hours of attendance, recording learner performance as each objective is achieved, but not deriving competencies from a task analysis. Relatively weaker competency-based courses tend to have opposite characteristics.

Problems encountered and ideas for improvement. Two open-ended questions dealing with problems encountered while operating a competency-based course and ideas for improving the course were included in the survey. In order of severity, learner problems such as low ability levels and unqualified students were most frequently described, followed by keeping the curriculum up-to-date. Administrative and organizational difficulties were also key problems. Other problematic areas concerned lack of time and inadequacies of materials and equipment.

Looking at respondents' ideas for improvement, curriculum and program revision was the greatest single suggestion, followed by updating of materials and equipment. These appear to be highly interrelated. Staff preparation was another important area--how do you get people to implement competency-based education? Better

links with business, industry, and labor was suggested predominantly from public educators. Improved evaluation methods and administrative support were pointed out as other areas for improvement by a number of respondents.

These suggestions for course improvement tended to be different from some of the types of problems mentioned. One respondent gave us a very candid response to the latter question by saying, "If we knew what to do to improve it, we would!"

Conclusions and Recommendations

The instances of high quality competency-based adult vocational education programs are few and far between. From the large number of referrals we received from people who should have been knowledgeable about what exists we got down to a very small number--278 responses. Of that number, 60 were judged by project staff to be adequate for inclusion in the National Directory of Selected Competency-Based Adult Vocational Programs.

Therefore, we need some major efforts in state and local staff development and curriculum development, and a major effort in dissemination. We found some excellent examples of competency-based vocational education for adults, but there are so few people who know about them that little opportunity exists for cross-fertilization of ideas. Almost everyone appears to be operating in isolation.

Very few programs responding to the survey presented convincing evidence of effective identification of tasks, formulation and validation of objectives, design of instruction, and student testing. Improvement is necessary to do an effective job in those four areas.

Another conclusion in this study is that the evidence of competency-based instruction is weaker in the private sector than in the public sector. But we should not get excited about the difference because overall the evidence is weak in both sectors.

The following observations came from site visits made by project staff with several respondents to the survey. (By the way, many of the people presenting in this workshop were visited on-site because their programs are among the exceptional ones we were able to locate.)

The site visits generally validated the data from the questionnaire. Strong competency-based courses as indicated in the questionnaire data really did appear strong when we went to observe them on-site, and some courses that appeared to have questionable features indeed had those questionable features when observed on-site. The data reported in the questionnaire appeared to be quite accurate among the 18 sites visited.

Several things I observed during the site visits troubled me. They relate to the extent to which we can very quickly proceed with competency-based adult vocational education. Some programs appear to be non-

transportable. This is related to a second observation: in most cases outstanding competency-based programs are related very closely to the personality of a charismatic instructor who has done a remarkable job. I don't know how you can infuse that instructor trait into someone who doesn't have it, and get the same kind of program. That's a perplexing thing to me. I worry about how we can generalize, how we can spread and diffuse these strengths of individuals. Such a capacity is not easily trained in other people.

On the other hand, I found two instances of exceptionally strong administrative support for competency-based programs. Both of those will be presented at this Workshop. The Suburban Hennepin County system which John Kobe will describe is one example of where the administrative support throughout the whole school system is exceptionally strong. The other instance is Bill Knaak of the 916 Area Vo-Tech Institute. These two Minnesota programs are exceptions to my earlier statement that it appears hard to spread competency-based adult vocational courses beyond the instructors who start them. With strong administrative support in those two places, competency-based education is implemented system-wide with rare exception, and it operates beautifully.

In conclusion, I suggest as an initial step in pursuit of the task of developing staff to implement or strengthen competency-based adult vocational programs, it probably is going to be most effective if staff members can see good competency-based programs in operation. One of the tools we have put together to facilitate this is the National Directory of programs. It contains detailed course and program descriptions. The 60 sites are displayed on a national map so that people in any area of the country can find competency-based programs in their own state or neighboring states to observe in action. Finally, I think the next best alternative for preparing to implement or strengthen competency-based adult vocational programs is to obtain as much information as you possibly can from presenters and participants in this Workshop. And, when the Workshop is over, share the information you will have obtained with your staff members and constituents!

EXHIBIT A

SELECTED COMMENTS ON COMPETENCY-BASED EDUCATION *

W. Robert Houston

> Competency-based education (CBE) is characterized by its rigorous reliance on objectives which set the parameters for both instruction and evaluation. Such objectives are derived from the role of the practitioner rather than from the logical structure of traditional disciplines. Objectives are clearly stated, explicit, defined in terms of what the learner is to demonstrate, and made public.

William G. Spady

> . . . a data-based, adaptive, performance-oriented set of integrated processes that facilitate, measure, record and certify within the context of flexible time parameters the demonstration of known, explicitly stated, and agreed upon learning outcomes that reflect successful functioning in life roles.

Merle Wood

> There are many other features of this methodology (CBE) but this one--students' demonstrated ability to perform on each segment of the curriculum--is the heart of the concept.

Robert Spillman and Herbert Bruce

> To determine curriculum content through occupational task analysis, to establish student performance standards, to provide an open-ended curriculum, and to design individualized learning activities--none of this is new to vocational education. Many vocational educators have been following these sound principles for years. Taken together, however, the principles of the competency-based education approach constitute a revolution in the delivery of vocational education.

I. David Glick

> CBE promises to restructure the educational process. The teacher is changed from a presenter of knowledge to a learning facilitator, diagnostician and counselor. The student is changed from a learning receptor to a learning activator (participant). Curriculum development is changed from a process of intuitive content manipulation into a systematic process of concept development. Evaluation is changed into an accountability forum where each component in the learning encounter is evaluated and assessed.

Daniel Dobbert

> Instruction is developed to achieve the specified competency at the criteria level as measured by the assessment. Learner progress is based on competency performance.

*For References, see Selected Reading List

CHAPTER III

EXEMPLARY COMPETENCY-BASED ADULT VOCATIONAL PROGRAMS

This Chapter includes presentations by Charles Walejko, John Kobe, Norma B. Brewer, Johnny H. Spears, Joe Cooney, Buddy Lyle, Rosemary Dawson, Harry E. Frank, and William C. Knaak.

AN INSTRUCTOR INITIATED AND OPERATED PROGRAM

Charles Walejko, Division Chairperson
Woodruff Regional Occupational Center
Stockton, California

First, I want to talk to you about the development of courses in shorthand, business English, and typewriting, and then a program which we call Business Careers, and finally a school which is a vocational/occupational school.

I would like, first of all, to give you an overview of what I'm going to cover. I'll talk about who we are, how we got to where we are now, managing what we have, and then, if we had to do it all over again.

Who Are We?

We are the Woodruff Regional Occupational Center, a five-year old area vocational school, located in Stockton, California, in the Central Valley. We operate from nine to 14 various adult occupational programs open to anyone 16 years of age and over. The oldest person enrolled this year was in her late 50s.

The total student population is about 800-900 students; about 60-70 percent are adults. Although there are several of these centers in California, we are the only one that has such a large percentage of adult students.

The center is open from 8:00 a.m. to 10:00 p.m., five days a week, and sometimes on Saturday. We've even been open on Sundays.

We operate on an open entry/open exit basis. That means that if there is a spot open in Welding at 9:00 or 10:00 a.m., the next person on the waiting list is contacted and comes in either that morning or the following morning. If the student can't make it, we give her/him a couple of days to get things lined up. Then if she/he can't make it, we drop that person and take the next person on the list. It works that way in every program. As soon as there is an opening, a new student enters. As soon as a student becomes competent or gets a job or decides that she/he wants to quit for one reason or another, she/he leaves.

All programs utilize a competency-based curriculum. However, some of them are doing a better job than others. Most instruction is individualized and self-paced. But what do we mean by individualization? All we're worried about is, can we help each person enrolled as much as possible? Sometimes instruction is provided in small groups, but most

of the time you'll see one-on-one student/teacher interactions.

There is an emphasis on the use of multi-media and a lot of use of TV right now. We're doing an awful lot on close-circuit television. For the past two years I've been involved with that effort.

We have support programs in math and reading. If a student's reading level is below the demands of the program, then she/he goes for one hour each day to build up those reading skills or math skills, or a combination of both.

The center operates on a job-like atmosphere--every program has a time clock, many have student foremen, managers or supervisors. The entire school uses the community as a classroom in on-the-job type training, which is very carefully controlled. We have linkages established with each employer.

How We Got to Where We Are

Competency-based instruction evolved through a combination of circumstances that were facing me in about 1969. At that time I taught in a very small vocational high school. There were about 200-300 students in this school at one time, although through the entire year there were quite a few who were in our programs.

There were several factors that led me to move towards a competency-based curriculum. First, I was dissatisfied with what was happening. I didn't like what I was doing. At that time there was a lot of pressure put on the schools by the State Department of Education to demonstrate accountability. Everybody was talking accountability. Our district provided in-service programs for us and I could see that we could become accountable in vocational education. It was not as difficult to measure results as it was in some other subject areas, for example, history. Another reason why I was dissatisfied, why I had to change, was the tremendous amount of pressure put on me to place people on the job. This was coming not only from the administration, but from my peers--teachers. They were involved with employers, a situation to which I hadn't been accustomed. The employers demanded specific results from us. Because we were placing people on the job, they were demanding job-ready skills. They kept calling us up. Our teacher/supervisor continued giving us feedback from local businesses. And I got disgusted with it, because everyone was asking us, "Why don't you teach this? Why don't you teach that?"

Another reason why I was forced into change was that the principal kept shoving people into my classroom. This was the first time I had ever been involved in an open entry/open exit situation. I used a lecture format and some small group work. That was about it. It did not work here. Everyday I had a new person. It just drove me up the wall, and I had to do something.

Development of Courses. These are the steps I took. I started with the business English, shorthand, and typing classes that I taught in the summer months to fifth and sixth graders. I didn't read any books. I kept up with my journals and professional magazines, but I didn't take any courses. I didn't go to a school and line it all up. I just sat down and tried to figure out how to overcome some of my problems.

1. I isolated the need-to-know from the nice-to-know, as I saw it it. What does this student need to know to get out there and function? And what is simply nice to know? This was a difficult thing for me to do, because a lot of the nice-to-knows I liked teaching. They were enjoyable for me, and were fun things for the students, too. I had to get rid of those kinds of lessons. In business English, a nice-to-know subject might be composing a sales letter; but today even a business manager seldom writes sales letters. She/he sends them out to a professional. So we got rid of that.

2. I took some butcher paper, taped it across a wall, and outlined all the need-to-knows. I took each need-to-know skill and stated it in a form that was clear and concise. Under each of these need-to-knows, I put a goal that had to be met. Some of the goals I pulled out of my head, some came from books, some from employers, some from other teachers, and some from my past experience. Then under that goal, I put the activities that had to be completed to meet that goal. Finally, I listed the equipment and other resources the student needed to complete these activities, to meet this goal, and presumably if thay met the goal, they would acquire that need-to-know skill.

   This got a little difficult, because all of a sudden I had to break it all down. You just can't say, for example, that the need-to-know would be the telephone, so we need a telephone, it rings, the student answers, and if he does it right, then that's it. That wouldn't be enough. I had to break it all down. The telephone I broke down into little steps. The information came from the Bell Telephone manual. It made sense. The telephone company will come in and work for a period of time with companies on telephone effectiveness, and this was the way they went through the whole process with us.

3. Next I made my first mistake in this effort. I tried to create the vehicle that was going to do the job. I created one, and started creating another when I realized that I was inconsistent. So I stopped and created a pattern that would be used for every one of the vehicles created--the same pattern. The pattern consisted of a pre-test with answers, a guide sheet for the student to use, a post-test with an answer sheet, and a special notes sheet for the teacher. The special

notes sheet became important because as I was creating this vehicle, I would come up with some ideas or reasons why I was using this method--a philosophy, for example, or a certain psychological point. Sometimes I wanted a student to respond a certain way, or I just wanted to include the name and address of a film that I was using, and this is where that information was recorded. Later in the year I would have these sheets as reference sources to refresh my memory.

4. Now the vehicles were ready to be created. The cover sheet looks like this. (See next page.) When I first developed it, it was a little more complicated, but we've found simplicity seems to work best. This is the cover sheet for every single package or guide or LAP, but I broke it down so fine that the student would look at the first page and say, "Hey, here's what's happening. What will I learn? How will I learn it? And how will I know that I have learned it?" So that the answer would be right there in front of the student. She/he would have a general idea of what was going to happen when she/he turned to the first page.

   I tried to write from two different angles--first of all from the teacher's point of view. I'd try to visualize the teacher presenting the material to the student or to a group of students. Then I took it and tried to sit down and follow it as a student. That's difficult to do. So there were two different ways that I tried to work it out. I tried to define as many terms as I possibly could, and tried to keep the language very simple.

5. I tried it out. It was wild, because now I know some things that I didn't know then. I didn't think far enough ahead. I thought I had enough to get going. But, it wasn't very long before I was just one LAP ahead of the students. That was work! The other thing was that I thought the LAPs or packages were perfectly clear. It kind of hurt my ego when they had a question.

The student must demonstrate ability to perform on key segments of the curriculum. That's what was so appealing to me, because the students did perform; they did the thing that I wanted them to do. If that student didn't meet what we now call the "performance objective," I had the opportunity to take that student and work with her/him in some other way. Now I could teach. I could draw on my background and bring it right down to where it's at for that person. I could prescribe to them various learning methods to see if I could help them over the hump. It was beautiful.

All of this was a one-teacher, one-classroom operation. There was nobody else involved in this development. The other teachers had some idea about what I was doing, they could see all the work that I was going

WOODRUFF REGIONAL OCCUPATIONAL CENTER

Sign your name and read the complete page

_____ Time Card No._____ Date_____
Last First Initial

WHAT WILL I LEARN?

HOW WILL I LEARN THIS?

HOW WILL I KNOW THAT I HAVE LEARNED IT?

Please go to the next page.....

Page 1 of

through, and they were getting feedback from the students. The principal had an inkling of what was going on because I would leave when he left, and he would be the last one to leave the building.

State Department of Vocational Education Efforts. The State Department of Vocational Education in California is divided into Bureaus (T&I, Home Ec., Business Education, and so on). The Business Education Bureau had a new chief and somewhere in the early 1970s his idea was, rather than to sit there and crank out a lot of material and then give it to the teachers, maybe he should get the teachers to suggest ideas about what to do. After materials were developed from this angle, the teachers were asked to review them to see if they made sense. They did make sense because the problems came from us, rather than a list of problems coming to us.

He set up something called a Management Conference in November--all the department heads went to this Conference. The Conference is held once a year, once in northern California and once in the southern area. Well, I attended the first and second Management Conferences in November. The first one was pretty good, but the second one was fantastic! They had a task force that had been doing the same thing that I was doing. I was inventing some kind of a wheel for myself, and they were already going to town on it. Their work resulted in the California Business Education Program Guide, a guide for implementing certain programs in office and distributive education. The Program Guide listed competencies necessary for office and distributive occupations. These competencies came from studies that I didn't know about or couldn't accumulate on my own. They came up with common kinds of skills that are needed in entry-level business occupations and called them Common Core, because they were common to office and distributive education (DE). A further expansion was made to include an Office Core, and a DE Core. Then, from Dictionary of Occupational Titles (DOT) codes they picked up various occupations--General Office Clerk, Clerk Typist, and so on. If a student became competent in all of these skill areas, he would then be a General Office Clerk, for example, and could pass the Civil Service examinations or hold down a General Office Clerk position. They went one step further and created measurable performance objectives. For example, they took Written Communications, Common Core, and spelled out the performance objectives necessary to become competent in that area as well as what materials or methods were needed to meet the standards.

Needless to say, I became enthusiastic about the Program Guide. So I came back and talked to the teachers on my staff and went through the Guide with them. They could see it, but were a little hesitant.

The Bureau Chief also identified various programs in the State of California that were good. He gave all the teachers' names and addresses, and we could go to them for visitations. Not all of these programs had competency-based curricula; however, each had something outstanding happening. We visited many of the programs, came back, and

compared notes. We began to see what was going on in the classrooms. If you see the operation going on in a classroom, that's something different. That's the way the teachers were sold.

We convinced the administration--that wasn't too difficult to do. We reorganized our advisory committee. Then we presented our new program to the advisory committee. They thought it was terrific. They were skeptical about its long-term success, but they wanted us to try it.

Development of the Business Education Program. The teachers organized a continuum for Business Education. From courses we went to Business Education as a whole program. Each teacher took a competency that she felt she was familiar with and began creating the LAP. Three of us had one semester to do it with no time off from our normal teaching day.

As each competency was completed--a pre-test, the vehicle itself (LAP),the post-test, and any support material--we put it into an envelope. Teachers' names were listed on the envelope, and it was routed around. It was the responsibility of every teacher on the staff to review the LAP and delete, add, or make suggestions. We agreed among ourselves that we weren't going to get into personality conflicts. We were going to actually work very hard to try and critique each other's work.

Surprisingly, it worked very well. When I got it back and there were all kinds of things written on it, I really didn't feel that bad looking it over. One of the teachers said she felt good that someone had taken the time to look over something she had done with the idea of helping her. It went back to the author and the author tried to implement the suggestions. Then it went to the typist.

We tried it out in 1974. We bought a time clock, and all the students would punch the time clock. We blocked off a small area in a room and called it our Inventory Area. We put all the curriculum there. The students came up, punched the clock, asked for whatever they needed, and took off into whatever area the directions told them to go. On a large board we had all the competencies and all the students' time card numbers so as they progressed through the competencies, they could visually see what was happening.

Advantages. Here are some of the advantages that I see. There was rapid student movement through the curriculum. Students moved faster through the curriculum than they did when we had the old set-up. They were competent; not all of them could do all of it, but they were competent in that they were becoming employed in those entry-level occupations that we identified. I felt that if they were becoming employed in those entry-level occupations, it did not matter if they completed the whole thing or if they weren't competent in all areas. But they were getting jobs in those areas.

Another thing that was great about it was that it was flexible--the curriculum was now flexible. We were no longer locked into courses that were in blocks, that were at one time set up for semesters and quarters.

We revised in 1974, 1975, 1976, and last week. The curriculum isn't that difficult to revise, because when something needs to be revised you don't have to grab the whole thing. All that is necessary is the packet on the topic being revised.

Disadvantages. The disadvantages were these. There was some confusion. Directions were unclear. Teachers who can't teach people who are walking around and who are talking to each other, doing this and that, are in trouble, because that's the way this curriculum operates. We encourage students to help each other.

At first, the teachers wanted to correct everything. They didn't want to let go and let the students correct their own material. The student has to practice, has to learn responsibility as he moves along.

Another problem was storage and reproduction of materials. Storage was a problem. Reproduction was a problem and still is. We had another problem, and that was with poor readers. So we tried to build in a reading and math program.

Student Manuals. The California Vocational Education Department's Bureau of Business Education created a special Task Force because a lot of teachers didn't care to go through the whole process of developing material necessary to meet the identified competencies. We were on this Task Force which created a student manual. We tried to put everything in very simple language and in a form that would draw the student's attention. The student manual included working papers--these were the learning activities that would be required to develop the skill. The answers were very handy for the student. Something that is very important is a Student Progress Chart. This Chart is available for each one of the competencies. The student takes care of making entries, thus doing her/his own record keeping. There is a spot for the teacher to sign it, and then the student moves on to another step. We created pre- and post-tests with this. The pre- and post-tests are divided into parts. Many times a person, especially an adult, comes in with some of the competencies. Why force that person to go through the whole process when she/he is already competent in some of those areas? If a student can demonstrate competence, she/he doesn't have to complete the learning activities. If she/he is competent in everything except, e.g., Part 4, then why go through the whole manual? We had a Teacher Strategy Manual for each one of these competencies, so that philosophies, methods, and so on, are included. Multi-media were developed to enhance the learning process through the units. The 1977-78 school year will be our first year in California where hundreds of schools will be going into competency-based business education for the first time using material prepared by the Bureau of Business Education.

Managing What We Have

The secret is flexibility. You have to be flexible. You have to be willing to give and to move. If there is a total disaster, so what? You can overcome that total disaster. It's just a disaster right now. Teachers have to be flexible and be able to communicate.

Problems in management.

1. Grading. What in this whole mess am I going to grade? We have 70 competencies with over 200 performance objectives. A decision must be made early because you cannot obviously grade everything. Our program uses pass/fail.

2. Correcting papers. This is still a horrendous thing. Everybody has gotten it down to a manageable amount, however we still have problems. Again, you cannot correct every paper. Students must do some of their own correcting.

3. Record keeping. How do you keep the record of the student's progress?

4. Affordability. Lamination will save you a lot of money. We laminate a lot of this material. You can keep using the material over and over again. Much use of media, especially audio tapes, will make more efficient use of teacher time.

5. Storage. The storage problem must be solved early when implementing an individualized competency-based curriculum. Shelves or cabinets, open or closed, locked or not, student accessibility or none, are some areas that need to be examined.

6. Follow-up. We have a postcard we send out that is a double postcard. As soon as the person withdraws, we type her/his name and address on it and put it in a tickler file. Three months later we pull it out and mail it to her/him. If we do not receive the card back, six months later we send another one out. A year later another one goes out. At the end of the year, those that we haven't heard from are called personally.

7. You'll need help. Try to get paid help, but if you can't, rely on students. One or two students are invaluable in helping you keep things straight.

If We Had to Do It Over Again

What would we do? Give teachers or someone, whoever's going to be involved in creating this thing, some time so they can sit down quietly and do some creating. I would hope that a whole semester or a summer

could be set aside for this purpose.

Involve counselors early in what's going to be happening. If you have counselors in your school who don't like working in an ivory tower, get them involved. We paid for that mistake dearly. We're just now getting back to some pr. ty good rapport with some of the counselors we left out of the process. Let them know what's going on, and have them involved with this thing, if you can.

Have a clear idea in mind what path the student is going to follow through your curriculum, before you create it. This week might be a good time for you to sit down and think--How is the student going to go through this unit? Is there going to be a pre-test? Is there going to be a post-test? If they fail the pre-test, what are they going to do? If they fail the post-test, what are they going to do? Just work it through your own mind. If you're not that far along in creating packages--maybe you want to think back a step. Then consider: How am I going to write the performance objective? How is the student going to comprehend the material that I am writing?

Have samples of published materials in your area, because we found we were creating material that had already been created and often it was better than what we did.

Create a time-line, and try to stick to it so that you don't procrastinate. If you can create some kind of a time-line you can follow, that would work out well.

Would I do it over again if I had to? I would definitely say, yes. The reason is simply because our students are successful on the job. We have placed hundreds of people. This year we've put over 150 people on the job; last year about 125; and over 600 people over the last five years. Employers are swamping us. We have more calls for people to place in jobs than we have people trained.

A LARGE, COMPREHENSIVE ADULT VOCATIONAL PROGRAM

John Kobe, Adult Vocational Director
Suburban Hennepin County Area Vo-Tech
Centers, District Office
Minneapolis, Minnesota

District 287 Suburban Hennepin County Area Vocational-Technical Schools is located in the western suburbs of Minneapolis with approximately 900 square miles and a population of 650,000. We represent 13 school districts and 23 high schools.

Program Features

Basically there are three levels of instruction--high school, post-high school, and adult. The high school students are bussed to each of the campuses from the 23 high schools for two-hour blocks of time. The post-secondary program starts at 7:00 a.m. and runs until 1:00 p.m., and a second group starts at 12:00 noon and runs until 6:00 p.m. At 6:00 p.m. the adult vocational program takes over the campus. We had approximately 22,500 adult vocational students in attendance for the 1976-77 school year, and are projecting 25,000 for 1977-78.

The District is dedicated to a competency-based, individualized, open entry/open exit program. When we started the District in 1968, we hired administrators and ultimately teachers who were committed to the individualized program. We developed 81 advisory committees, with 1,150 members, who also were to eventually understand the individualized program, to support it, and to help us in designing the curriculum.

All of the curricula which are used in the school have been developed by the post-secondary program people. The school administration designed a structure for learning activity packages, called "PAKs," throughout all programs in the school system. Teachers, lead teachers, department chairmen, and administrators, along with resource persons and inservice trainers, have developed the curricula in all of the 81 areas of instruction within the school.

In addition to the competency-based program, we have a competency-based diploma. Each program has a list of competencies which become part of the student's individual cumulative records. The same competencies are attached to the diploma. This means that a student can attend our school for any length of time and achieve at least one or two competencies, leave school, and present to a prospective employer his diploma listing those competencies which he has achieved.

Through the open entry/open exit program, we start students in the post-secondary program whenever there is an opening. We give them credit for what they have already learned, whether it be the high school program or elsewhere. And if they wish, they can drop out and continue their education part-time at the adult level. We feel that we have complete program articulation among the three levels. This means that a student can start a program at the high school level and start working his way through the list of competencies, continue at the post-high level, and if need be drop out and finish at the adult level. Many students start at the adult level, find out that they enjoy the educational experience, and, wanting to finish up quickly, will then transfer to the full-time post-secondary program.

The Adult Competency-Based Program

The adult competency-based program is designed in the post-secondary program and used at the adult level. We also use it a great deal when working with the many companies for which we do training. I received a call not too long ago from the Alpana Corporation, which had two employees who needed some special work in the area of aluminum welding. They did not want to attend our full program in welding, they just wanted training in aluminum welding. By going through the list of competencies for the welding program, we were able to pull out just those competencies the employer felt that the employees needed. The employees were then sent to the north campus for training on just those competencies. After completion of the training, we determined the length of time involved and sent a bill for the amount of money needed to the company. We call this prescriptive education.

The competency-based program is used a great deal in the areas of typing, shorthand, Graduate Equivalency Diploma (GED), and bookkeeping. In the bookkeeping program, we have the lab open three nights a week, and the students can come to the program whenever they feel it is necessary. This means that attendance records are kept for each student. Some may wish to be in attendance three nights a week, some one night a week, some every other week. The lab is open for their convenience. After the end of a specific period of time, the number of hours of attendance are tallied and a bill is sent to the student.

Our goals for the adult vocational program for 1977-78 include the adoption of competency-based programs in all of the courses which match the day school. This means that we must bring the adult vocational teachers up-to-date on the use of the PAKs and the competency-based approach. This updating will include curriculum development in some cases, but certainly the evaluation of instruction. At the present time in our adult vocational teacher training, we have five units of instruction. The first unit, which is three hours in length, deals with an overview of adult vocational teaching. Unit 2, which is 12 hours in length, and is paid for by the individual teachers, deals with Part A of our curriculum development program, having to do with the development of

the tasks involved in analyzing a particular job. Unit 3 of our adult vocational teacher training program deals with the delivery system of the individualized instructional program. Unit 4 includes the hardware and methodology of teaching. Unit 5 deals with the psychology of adult learning.

When the adult teacher training program was developed, we decided what should become part of that program. To help assure that we are meeting the needs of the adult vocational teachers, I completed a study this year on the competency needs of adult vocational teachers (Ph.D. Dissertation at the University of Minnesota). The results of this study will be used in the designing of an adult vocational teacher training program which is built around the perceived needs of the teachers and their administrators.

Advantages and Disadvantages

We have found through the past five years of experience that the individualized, competency-based, open entry/open exit program works, and it is particularly valuable at the adult level. We find that the adult students come to us with widely varied backgrounds. About the only way we can meet the individual needs of all these students is by presenting them with an individualized program. Part of the difficulty at the adult level, though, seems to be that the adult student is a bit uneasy with the competency-based program. They expect a more traditional teacher-centered/subject-centered/institutional-centered approach, and we are finding that it frequently takes a bit of an indoctrination on the part of the teacher to the students so that they become more comfortable with the individualized nature of the learning. But we have also found that the adult student is very flexible, and, after the orientation and after working with the materials for a short period of time, they like them better than what we would call the more traditional approach to adult vocational teaching.

Perhaps one of the big advantages of competency-based adult vocational education is that on programs such as welding, where we offer a course which is more advanced, we would not perhaps get enough students for the advanced course. By offering these advanced courses on the same night by the same instructor, we then find that we will have two or three registering for each one of the advanced courses and then we have enough to offer the course, i.e., at least 10 adult vocational students.

One of the drawbacks to the competency-based program is the cost. For all the students who need the materials, the learning PAKs in this case, we have to do a lot of Xeroxing of materials. This takes not only time, but obviously a great deal of money is involved in the processing of these forms. The cost of the development of materials is transferred to the student, and then is reflected in the cost that he pays for each of his individual courses. We find that we still have a long way to go

in individualizing all our programs, but with the help of the department chairmen and the campus administrators, we are finding that the conversion of the adult vocational program to the competency-based individualized open entry/open exit program is working out very smoothly.

NOTE: Following are examples of pages from one of our Individual Learning PAKs and example pages from a Student Cumulative Record form. These pages illustrate several of the ideas I have presented.

STUDENT NAME _____

ESTIMATED TIME TO COMPLETE 20 Hours

DEPARTMENT Transportation

INDIVIDUAL LEARNING PAK

TITLE: Basic Sheet Metal

TASK (OPERATION): Filler Use

PURPOSE: Skill and knowledge development in the use of plastic and solder fillers.

GENERAL PERFORMANCE OBJECTIVE:

Given a general purpose pick hammer, flat vixen file, all purpose dolly, grater plane, sanding board, torch, plastic and solder fillers, you will be able to repair and fill sheet metal damage to the instructor's satisfaction.

SEE YOUR INSTRUCTOR FOR TESTING THROUGH

UNIT	PAK	SEGMENT	PROGRAM	DATE
3	3-3		Autobody	6/20/73

SPECIFIC PERFORMANCE OBJECTIVE FOR THIS SEGMENT:

Where, when, how to use solder filler.

LEARNING ACTIVITIES	RESOURCES
Read Chapter on solder filler. Rough and align damaged area received from instructor. Prepare metal for filler. Ask instructor for demonstration if you desire. Solder fill damaged area (overfill 1/2"). File and sand filler (pick low areas up as necessary) Show finished product to instructor for grade. Ask instructor for classroomtest. OPTIONAL ACTIVITIES:	Attached information sheets. Sargent Chapter 6 * Hogg Chapter 6 * Optional reading

UNIT	PAK	SEGMENT	PAGE	PROGRAM	DATE
3	3-3	1		Autobody - Basic	6/73

AUTOBODY PLASTIC USE

HOT WEATHER CONDITIONS

1. If car has been exposed to the hot sun, let the metal cool to shop temperature before beginning work.
2. Because the patch will cure faster in the summer or in warm climates, we suggest cutting back on the amount of hardener normally used to get the best results but not more than 25%.

COLD OR HUMID WEATHER CONDITIONS

1. Cars sitting outside in the winter will "sweat" when brought into the warm shop. For this reason you should be very careful to let the metal warm on and around the spot to be patched to room temperature before you make your application of plastic.
2. In cold or damp weather the patch may take slightly longer to cure. Consequently we suggest mixing the putty and hardener on your pallet longer than usual so that the set time on the car will be faster.

THE BASIC STEPS

PREPARING THE SURFACE: Grind surface (preferably with a Grit 16 or 24 Disc) clean to the bare metal leaving no grease, dirt, paint, wax, rust or moisture on the surface.

MIXING: Knead cream hardener thoroughly in its plastic container. Before removing putty from can mix thoroughly from bottom up. Mix putty and hardener thoroughly in a ratio of 1/4 of the hardener to 1/4 of the putty. For larger or smaller amounts use proportionately. Remove only enough putty from can to make repair. Mix hardener and putty with a plastic applicator or wide putty knife, using a firm, flat "wiping" motion. Wipe in one direction only, drawing putty across mixing board.

EVALUATION FOR THE GENERAL PERFORMANCE OBJECTIVE

SOLDER FILLING
UNIT 3-3

1. 30% of the bar of solder is composed of _____
   and 70% of the bar is _____.
2. Three types of tinning materials available for preparing metal surfaces are: a. _____
   b. _____
   c. _____
3. Two effects of using too much heat when solder filling are:
   a. _____
   b. _____
4. Some areas where a soldering iron can be used effectively are:
   a. _____
   b. _____
   c. _____
   d. _____
5. Some of the materials which may be used to lubricate the maple or birch solder paddles are:
   _____ and _____ _____
6. When solder filling several areas in one panel each area must be quenched before another is filled because:
   _____ _____
   _____
7. Tinning is necessary before adding solder to _____
   _____
8. When using a welding torch with a slip-on tip, only
   _____ _____ is used.

PROGRAM	DEPARTMENT	PAK	DATE
Autobody	Transportation		6/73

TASK LISTING SHEET

JOB/OCCUPATION: Autobody - Solder Filling

TASKS

1. Solder fill small damage.
2. Solder fill welded area.
3. Sodler fill large area.
4. Plastic fill small dent.
5. Apply plastic filler to a large area.

PROGRAM	DEPARTMENT	DATE
Autobody	Tranportation	

287

TASK DETAILING SHEET

JOB/OCCUPATION: Autobody Solder Filling Unit 3-3

TASK: #1 Solder Fill Small Damage

STEPS IN PERFORMING THE TASK

DOING	KNOWING
1. Install damaged panel received from instructor.	
2. Rough and align panel to within 1/8" .	Metal repair methods.
3. Cleanup fill area.	Cleanup methods
4. Tin and solder fill damaged area.	Soldering equipment and methods
5. File and sand panel.	Methods of metal finishing solder
6. Show panel to intructor.	

PROGRAM	DEPARTMENT	DATE
Autobody	Transportation	6/73

FEBRUARY 23, 1973 FORM D

GENERAL PERFORMANCE OBJECTIVE FOR THE BLOCK [PAK]

Proper use of plastic and solder fillers and equipment in autobody repair.

SPECIFIC PERFORMANCE OBJECTIVE(S) FOR THE TASK(S) [SEGMENT(S)]

1. Where, when, and how to use body solder.
2. Advantages and disadvantages of solder filling.
3. Techniques and problems in solder filling large areas.
4. Plastic filler use and application.
5. Problems and advantages of plastic fillers.

PROGRAM	DEPARTMENT	PAK	DATE
Autobody	Transportation		6/73

FEBRUARY 23, 1973 FORM F

237

LESSON PLAN

TEACHING AIDS, DEVICES, ETC:

Torch	Paddle lube
Solder	Paddle
Tinning compound	80 grit strips
Plastic	40 grit strips
GP pick	Bench brackets
AP dolly	Sheet metal panels
Sanding block	
Sanding board	

PROCEDURES: (INCLUDE STEPS, METHODS, TIME)

Lecture: Solder filling equipment, techniques, and uses

Demonstration: Solder filling

Lecture: Solder filling problems

Lecture: Plastic filling equipment, uses and application methods

Demonstration: Plastic filling

Lecture: Plastic filler problems and cures

Test: Fillers

UNIT	PAK	SEGMENT	PROGRAM	DATE
3			Autobody - Basic	

Suburban Hennepin County Area Vocational-Technical Centers
Joint Independent School District // 287
Student Cumulative Record

Campus: North ☐ South ☐

Program No._____ Student No._____ Social Security No._____

Name_____ Permanent Address_____

Phone No._____ Date of Birth_____ Name & No. of Home School District_____

RATING SCALE

6– Performs task/competency with exceptional ability.
5– Performs task/competency with speed and quality.
4– Performs task/competency at job entry.
3– Performs task/competency with periodic assistance.
2– Performs task/competency with constant assistance.
1– Cannot perform this task/competency satisfactorily.
T– Task/competency accomplished at or above job entry level by performance-challenge test.

AUTO BODY REPAIR AND REFINISHING

Comp. No.	Competencies • Task	Ratings 1	2	3	4	5	6	Final	*Hr. Avg.	Instr.
01	INTRODUCTION TO AUTO BODY (40 Hours)									
*01 01	Orientation to School and Shop Policies								5	
	01 Orientation to school policies									
	02 Orientation to shop policies									
	03 Orientation to evaluating student performance									
*01-02	Orientation to Body and Paint Shop Safety								5	
	01 Orientation to fire safety									
	02 Orientation to equipment safety									
01-03	Identify Body Construction and Parts								5	
	01 Identify conventional body construction and parts									
	02 Identify unibody body construction and parts									
01-04	Estimating Body Damage								25	
	01 Use estimation form									
	02 Use crash book									
	03 Estimate material cost									
02	GAS WELDING (180 Hours)									
*02 01	Oxyacetylene Welding Flat Position								45	
	01 Safety, setup and operate oxyacetylene welding equipment									
	02 Run bead without rod									
	03 Run bead with rod									
	04 Weld outside corner joint									
	05 Weld butt joint									
	06 Weld inside corner joint									

*Hour Average: The hours it takes the average student to complete this competency.

Comp. No.	Competencies - Task	Ratings 1	2	3	4	5	6	Final	*Hr. Avg.	Instr.

INSTRUCTOR INITIALS

1. _____ _____
2. _____ _____
3. _____ _____
4. _____ _____
5. _____ _____
6. _____ _____

For additional information concerning the student's training, please contact:

Office of Admissions & Records
Suburban Hennepin County Area
Vocational Technical Centers
1820 North Xenium Lane
Minneapolis, Minnesota 55441

*Hour Avg. - The hours it takes the average student to complete this competency.

ENTRY DATE _____ EXIT DATE _____	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
EVALUATION DATE													
TOTAL CLASS DAYS													
DAYS ABSENT													
TIMES TARDY													

JOB SKILLS													
Quality - Ability to meet standards.													O=Outstanding
Quantity - Ability to meet production standards.													
Housekeeping - Ability to clean and maintain tools, equipment and stations.													
Safety - Observes Safety rules and regulations													S=Satisfactory
Initiative - Ability to work without constant supervision, self-motivated.													
INTERPERSONAL SKILLS													
Dependability - Reliability, honesty and integrity.													
Cooperation - Ability to work with others.													I=Needs Improvement
Attitude Towards Work - Interest in career objective and desire to learn.													
Leadership - Ability to lead others in a desired direction or toward a common goal.													NA=Not Applicable
Adaptability - Adjustment to task or situation.													

Education Period	Student Signature	Date	Instructors Signature	Education Period	Student Signature	Date	Instructors Signature
1				7			
2				8			
3				9			
4				10			
5				11			
6				12			

Suburban Hennepin County Area Vocational-Technical Centers

JOINT INDEPENDENT SCHOOL DISTRICT #287

This certifies

_____

has the competencies evaluated on the
reverse side for the program

and is therefore entitled to receive this

Recognition

given this _____ day of _____, 19 ___

Chairman of the Board

Superintendent

RATING SCALE

6— Performs task/competency with exceptional ability.

5— Performs task/competency with speed and quality.

4— Performs task/competency at job entry.

3— Performs task/competency with periodic assistance.

2— Performs task/competency with constant assistance.

1— Cannot perform this task/competency satisfactorily.

T— Task/competency accomplished at or above job entry level by performance-challenge test.

For additional information concerning the student's training, please request a transcript from:

Office of Admissions & Records
Suburban Hennepin County Area
Vocational Technical School
1820 North Xenium Lane
Minneapolis, Minnesota 55441

INSTRUCTOR	INITIALS
1.	
2.	
3.	
4.	
5.	
6.	

COMPETENCIES

[illegible]

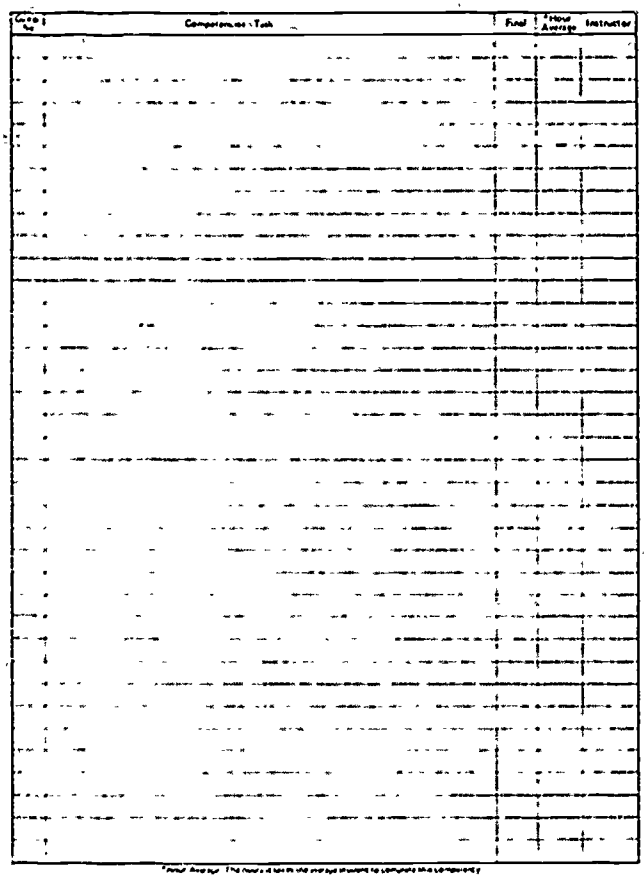
Comp. No.	Competencies / Task	Final	*Hour Average	Instructor
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
02	SHOP MANAGEMENT			
02.01	[illegible]			
02.02	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
03	[illegible]			
03.01	[illegible]			
03.02	[illegible]			
03.03	[illegible]			
04	[illegible]			
04.01	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			

*Hour Average: The hours of instruction the average student takes to complete the competency.

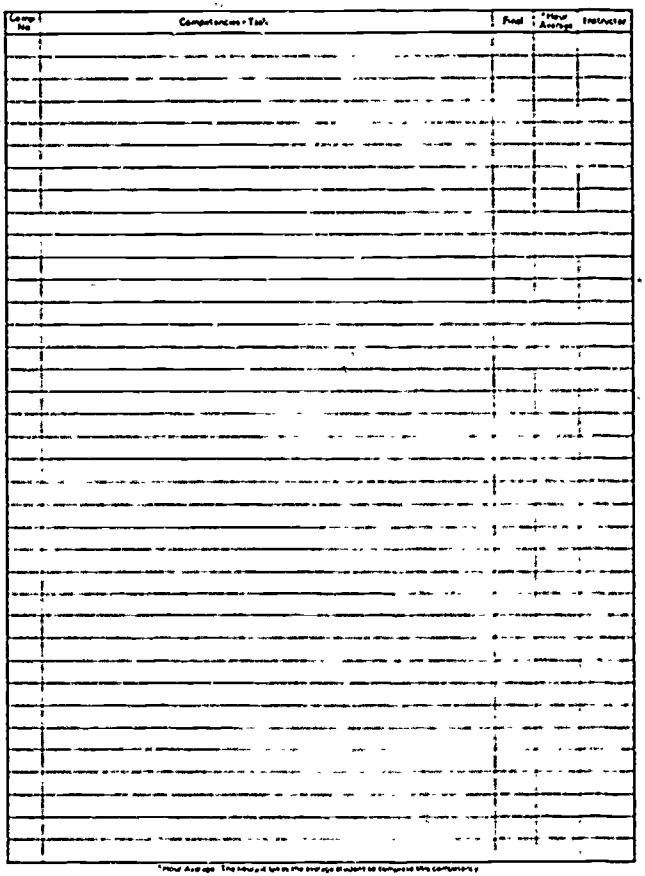
Comp. No.	Competencies / Task	Final	*Hour Average	Instructor
[illegible]	Apply [illegible] Techniques			
[illegible]	Apply [illegible] Techniques			
[illegible]	Apply Flywheel Rebuilding Techniques			
07	DRIVESHAFT FABRICATION			
07.01	Apply Design and Theory			
07.02	Build Driveshaft			
07.03	Balance Driveshaft			
08	SHOP EQUIPMENT REPAIR			
08.01	Repair Mechanically Driven Machinery			
08.02	Repair Hydraulically Driven Equipment			
08.03	Repair Pneumatically Driven Equipment			
08.04	Repair Electrically Driven Equipment			
09	MACHINE SET UP AND OPERATIONS			
09.01	Operate Hot Tank			
09.02	Bore Block			
09.03	Service Cylinder Head			
09.04	Align Bore Block			
09.05	Align Hone Block			
09.06	Mill Block			
09.07	Service Rod and Pistons with [illegible] Service Rod and Pistons in [illegible]			
09.08	Automatically Hone Cylinder with CK10			
09.09	[illegible] Bead Blaster			
09.10	Weld Crankshaft Submerged Method			
09.11	Grind Crankshafts			

*Hour Average: The hours of instruction the average student takes to complete the competency.

COMPETENCIES



*Hour Average - The hours allotted on the average students to complete this competency



*Hour Average - The hours allotted on the average students to complete this competency

INTER-AGENCY ROLES AND FUNCTIONS: THE PAVE PROJECT

Norma B. Brewer, Research Associate
Research Coordinating Unit
State Department of Education
Montgomery, Alabama

Johnny H. Spears, Instructor
Radio and TV Repair
Tallapoosa-Alexander City Area Training Center
Alexander City, Alabama

Overview of the PAVE Project
(Norma B. Brewer)

I am employed by the State Department of Education and work in two departments, the Research Coordinating Unit and Adult Vocational Education.

I would like to tell you about the PAVE project--Performance-based Adult Vocational Education. This project is a research study which received a federal grant of approximately $150,000 for 18 months and is administered by the State of Alabama, through the Department of Education. It began July 1, 1976, and will be completed in December, 1977. There are two instructional phases in the project. Instructional Phase I began in January of this year and was completed in June. Phase II will begin in September and will be completed at the end of November.

The PAVE project is unusual organizationally in that it is a cooperative project between two departments in the State Department of Education.

Terms

When this project began, the term "competency-based education" and "performance-based education" were used interchangeably, but more and more we have used the term "performance-based." We define performance-based instruction as instruction which results in actual performance on the part of the student.

What Will the PAVE Project Do?

These are the goals of the PAVE project:

1. To develop an adult vocational education performance-based

program, using a research based instructional system design. This model will include: administrative procedures, procedures for assessing learner competency, identifying learning needs, describing learning activities, assessing the competencies that are acquired, and certifying student competency.

2. To assess the application of performance-based research products being developed by the Vocational-Technical Education Consortium of States (V-TECS) in developing adult vocational education programs.

How Will We Do This?

1. We will develop a model to implement performance-based adult vocational education.

2. We will develop a plan to train adult vocational instructors to develop and use performance-based instruction. We have set up criteria for the selection and training of these instructors. We have set up trainee reference materials and performance standards and criterion-levels for each segment of instructional systems developed.

3. We will train 10 adult vocational instructors to criterion-levels of performance in performance-based instruction. We enlarged that group to 13 to take care of natural attrition of instructors.

4. We will implement performance-based instruction in 40 adult vocational classes. With the additional three instructors, that number has increased.

5. We will complete an evaluation study of the effects of using performance-based instruction in adult vocational education.

In summary, these are the five big goals this project had: (1) to design a model; (2) to develop a plan for training adult instructors; (3) to train 13 instructors to criterion-level performance; (4) to implement performance-based instruction in 52 vocational classrooms; and (5) to complete an evaluation study of the effects of using performance-based instruction.

I should tell you a little about Alabama. Some of you may be farther along as far as implementing performance-based instruction in your classrooms. In Alabama we have done it piecemeal--a little bit here, a little bit there. Some groups are farther ahead than others, but this is the first really concentrated effort to begin the implementation of performance-based instruction.

What Steps Are We Taking?

1. We randomly assigned 39 vocational instructors to three groups of 13. We have three groups of instructors--one group being trained to criterion-levels of instruction. (Johnny Spears is in group one.)

2. We are giving pre- and post-test performance tests to all students.

3. We are going to compare the results of the three programs. (We have not reached that point yet; we're just now at the end of Phase I.)

How Does This Help Vocational Education?

1. We will have research-validated evidence of the value of V-TECS materials.

2. Performance-based instruction will benefit 1,800 instructors and 86,000 students in the State of Alabama. Eventually 245,000 students in Alabama (that's all of our students--day and night) will benefit from performance-based instruction in vocational education.

The V-TECS Catalogs

The first step in our project was to decide which of the V-TECS catalogs we would choose. V-TECS catalogs contain lists of specific tasks within a given occupational area, performance objectives for these tasks, and criterion-referenced measures.

V-TECS stands for Vocational-Technical Education Consortium of States. When V-TECS started in 1973, there were seven states in the Consortium with Alabama one of the original states. Now there are 17 states involved. The Vocational-Technical Education Consortium of States is an organization of the Southern Association of Colleges and Schools. The purpose or goal of V-TECS is to develop catalogs of performance objectives and criterion-referenced measures in occupational education.

Operating under standard guidelines, each state develops catalogs as agreed upon by the V-TECS Board of Directors. Once a catalog is developed, it is made available to the other member states. In this way, the Consortium promotes job relevance, performance-based instruction, reduces duplication of effort, and shares in the research and development of the catalogs.

There are four major steps in developing a catalog: (1) the occupational inventory, (2) the occupational survey, (3) the field review, and (4) the final catalog. It takes 450 calendar days to develop a catalog.

A catalog is not the complete tool for teaching. It is a curriculum outline. A teacher must provide the teaching materials.

The V-TECS catalog is really just a very involved teaching outline, if you will. It is impossible to take just this catalog and teach; you need support materials to teach. That was one of the portions of our study--we gave the catalogs to our people, but they had to develop the material, and we paid them for developing the support materials.

Through Alabama's Delta Project, we have completed six catalogs (there are 35 in all)--we have developed catalogs in Radio/TV, Nurseryman, Auto Parts Clerk, Licensed Practical Nurse, Alterationist, and Cosmetologist. They are outstanding catalogs. We are working on other catalogs--Air Conditioning is one that we have been working on for quite awhile. Alabama and Florida are sharing the Homemaker catalog, and they are finding that to be a very involved catalog--the task analysis of what a homemaker really does just staggered everybody. We are also working on Bookkeeper, Bricklayer, and Cattle Rancher. (We have had a lot of fun with the Cattle Rancher catalog. The fellow who is doing that one began wearing cowboy boots, a ten-gallon hat, and really got with it!)

The Plan of the PAVE Project

Step one of the project involved choosing the vocational areas. We had developed criteria to select which of the 35 catalogs we were going to use. We decided on the following five criteria:

1. A vocational area that had on-going classes. We felt we needed a solid base. Since we were doing a research study, we had to have a group of established classes that allowed for replication of the study.

2. A vocational area appropriate for adult classes.

3. Available catalogs

4. Experienced teachers; we didn't want to have to break in the teaching staff along with a new concept.

5. Adult classes that required no certification. This requirement took us out of the areas of Health and Cosmetology, because they both require some type of certification or diploma.

We ended up with four courses in T&I--Welding, Auto Body, Auto Mechanics, and Radio/TV. In Business and Office Education we used Business and Office Procedures.

The second step was to choose the tasks that could be included in the curriculum of each teacher. Because it was a research study we felt that we needed more control of the tasks than leaving them to the discretion of the teacher. We took the catalogs to a Craft Committee and asked them to select the tasks which should be taught in a 72-hour adult class. They chose the tasks, and we took these tasks to our Group 1 instructors (those who would be trained to criterion-level instruction), and asked them if they agreed with the choices. The highest number of tasks--61--was chosen for Radio/TV. The smallest number was chosen for Auto Body (see Table 1).

TABLE 1

NUMBER OF TASKS BY VOCATIONAL COURSES

Vocational Courses	Number of Tasks
Auto Body	16
Auto Mechanics	22
Business and Office Procedures	29
Radio and TV	61
Welding	21

We are working with adult educators in two types of schools--the area vocational centers, which are connected to the secondary schools, and the technical colleges, which are post-secondary schools in Alabama. The third step was to obtain instructors for the project. We obtained the services of 13 instructors of adult short courses in Technical Colleges and 26 instructors of adults in area vocational centers.

instructors were supposed to be randomly assigned to three experimental groups, E_1, E_2, and E_3. However, for many reasons, we were unable to obtain one instructor per school. Eventually, we had to randomly assign schools to experimental groups E_1, E_2, and E_3.

The first group of instructors, Experimental Group 1, were paid for 30 hours at $7.00 per hour for developing materials. We did that for the first and second groups. They developed the teaching materials to go along with the tasks they were given. The third group could teach the pre-selected tasks any way they wanted and use any kind of materials they had. The first group received in-service training. Groups 2 and 3 did not. All three groups received money for pre- and post-testing. All

three groups received money for the purchase of materials. In Phase I, Groups 1 and 2 received money for development of materials, because they were going to be teaching performance-based instruction. In Phase 2, all three groups were to use the same tasks and teaching materials that they used in Phase I.

We developed a guide to help Group 1 and 2 instructors set up the PAVE system. The PAVE Guide is a step-by-step procedure for implementing the PAVE system. Then we brought in the Group 1 instructors for in-depth training in setting up the system, focusing on performance-based instruction and teaching adults. Group 2 was mailed all the materials and told to do the best they could. Group 3 received a list of tasks they were to teach, and were told to do the best they could (see Table 2).

TABLE 2

MONEY, IN-SERVICE TRAINING, AND MATERIALS RECEIVED BY EXPERIMENTAL GROUPS E_1, E_2 AND E_3 IN PHASE I

	Money			Training	Materials		
Group	Development of Teaching Materials 30 hrs @ 7.00	Pre and Post Test 10 hrs @ 7.00	Purchase of Teaching Materials 50.00	In-Service Training	PAVE Guide and Forms	V-TECS Catalog	List of Tasks
E_1	max. $210.00	$70.00	$50.00	yes	yes	yes	yes
E_2	max. 210.00	70.00	50.00	no	yes	yes	yes
E_3	none	70.00	50.00	no	no	yes	yes

One of the findings of Phase I included information as to the confusion in Groups 2 and 3, which indicated that the instructors do need more help, especially in implementing performance-based instruction, a form of instruction they have not used previously. Another finding was that some of the instructors have begun to use performance-based instruction in their day classes. This pleased us. In addition, the administrators seem to be very pleased with their instructors and with the project. They have bought materials and tools our instructors needed for the tasks, and they have begun to replace the old materials and tools.

The PAVE Project in a Local School
(Johnny H. Spears)

I am an instructor from the Tallapoosa-Alexander City Area Training Center, located in east-central Alabama. Our facility has been operational for three years and serves both secondary and adult students. I offer competency-based instruction to all students enrolled in my Radio and TV Repair Program.

My program was developed utilizing V-TECS catalogs in cooperation with the State Department of Education's PAVE project. The PAVE (Performance-based Adult Vocational Education) project was designed to bring competency-based education to the adult vocational students of Alabama.

Program content was taken from V-TECS catalogs, to which Alabama is a contributing member. I helped compose a portion of the surveys for V-TECS and could see the need for competency-based education in our school system.

As a participant in the PAVE project, I was asked to select three instructional areas from V-TECS and to develop the instructional materials to support these areas of study. My program was taught in a 72-hour time block and contained 61 tasks within the three instructional areas. These areas included service and repair of power supplies, radios, and tape players/record changers. I arranged the tasks within each area according to complexity.

The V-TECS catalog contained the performance objectives, the criterion-referenced measures, and performance guides for each task (see next page). I developed the support materials to go along with the 61 tasks. All support materials were incorporated into an Instructional Planning Sheet (Form 5) which listed the page number from the V-TECS catalog, the task number, performance objective, necessary materials, and finally a progress check. Once this was developed, each student was given the task sheet along with the Form 5, so he had everything required to perform each task. Instructional Planning Sheets (Form 5) were developed for all 61 tasks to be taught (see example).

At the first scheduled class meeting, students were given a Form 2. This form was simply a list of tasks, performance objectives, and criterion-referenced measures. Each student was asked to identify all tasks which he felt he could perform proficiently. The following two nights included performance demonstrations by the individuals on tasks so identified. Those individuals performing these tasks proficiently were allowed to proceed to those tasks they could not perform. Records for each student's progress were recorded nightly and placed on the Form 2 belonging to each student. Records were also posted on a master sheet which identified each individual's progress. Reference to the master sheet on individual records immediately showed the learner where work was needed (see Form 2 example).

Duty: SERVICING RADIOS

Task: Check and replace transistors

PERFORMANCE OBJECTIVE

Given a radio suspected of having a defective transistor, the proper schematic and manufacturer's specifications, and the proper tools and equipment, check the transistors and replace them if defective. Radio operation must be restored to normal after transistor(s) is/are replaced. If no transistors are found defective, all checks must match manufacturer's specifications. (1)

CRITERION-REFERENCED MEASURE

Check the transistor(s) in the radio provided by your instructor. If any are defective, replace them.

PERFORMANCE GUIDE

1. Remove back from radio.
2. Remove radio chassis.
3. Position radio for easy access to transistors.
4. Make necessary checks to isolate faulty transistors.
5. Remove faulty transistor.
6. Select proper replacement transistor.
7. Install replacement transistor.

NOTE: If soldering is required, use heat sink to prevent heat damage to the replacement transistor.

8. Turn radio on and check for proper operation.
9. Check DC bias on replacement transistor(s).
10. Turn radio off.
11. Replace radio chassis.
12. Replace back on radio.
13. Make final operational check.

FORM 5
INSTRUCTIONAL PLANNING SHEET

COURSE: Radio and TV Repair DUTY: Servicing Radios

TASK: # 23 Check and replace transistors V-TECS CAT. PAGE NO. 23

PERFORMANCE OBJECTIVE:

Given a radio suspected of having a defective transistor, the proper schematic and manufacturer's specifications, and the proper tools and equipment, check the transistors and replace them if defective. Radio operation must be restored to normal after transistor(s) is/are replaced. If no transistors are found defective, all checks must match manufacturer's specification. (1)

NECESSARY KNOWLEDGES AND SKILLS*	LEARNING ACTIVITY	RESOURCES (MEDIA & MATERIALS)	PROGRESS CHECK
1. Transistor curve tracer on transistor tester.	1a. Instructor will demonstrate proper use of transistor tester in detecting defective transistors. b. Learner practices procedure.	1. Transistor curve tracer or transistor tester.	1. Learner will demonstrate proper use of transistor tester.
2. Soldering practices and procedures.	2a. Instructor will demonstrate proper soldering techniques for solid state components. b. Learner practices procedure.	2. Soldering iron, solder, brushes, scribe, heat sink	2. Demonstrate to instructor proper soldering procedures for solid state components.
3. Knowledge of transistors.	3. Basic electronics, pp 492-505.	3. (Transistors) Basic electronics.	3. Learner will explain purpose and specifications of transistors.

(continued)

*The Performance Guides in the V-TECS catalog may be helpful in identifying these.

PAVE PROJECT

FORM 2

LIST OF TASKS, PERFORMANCE OBJECTIVES AND CRITERION-REFERENCED MEASURES

NAME _____ DATE _____ COURSE Radio and Television

TASK NO.	TASK	PERFORMANCE OBJECTIVE	CRITERION-REFERENCED MEASURE	DATE ASSIGNED	DATE COMPLETED	NO. OF TIMES CRM TAKEN	TOTAL TIME
1	Check AC Voltage Input to Power Transformer (111)	Given a TV set, a VTVM, and the appropriate schematic and manufacturer's specifications, check the AC voltage to the primary of the transformer. Your voltage reading must match manufacturer's specifications. If they do not, all voltage checks must be verified and approved.	Check the AC voltage to the primary of the transformer provided by your instructor.				
2	Check and/or Replace Fuses (116)	Given a TV set with a suspected blown fuse in the power supply and the necessary equipment and supplies, check the fuse and replace it if it is blown. If the fuse checks good, all check procedures must be verified and approved. Replacement of a blown fuse must restore normal set operation.	The TV set you have been provided has a suspected blown fuse in the power supply. Check the fuse and replace if blown.				
	(continued)						

At the end of the 72 hours of study, each individual participating was awarded a certificate of training. Records were kept on file of task completions for future reference.

THE ADULT COMPETENCY EDUCATION PROJECT

Joe Cooney, Director
ACE Project
San Mateo County Office of Education
Redwood City, California

The Adult Competency Education (ACE) Project is an effort of the Vocational Education Division of the San Mateo County Office of Education.

The project was funded by Section 309 of the Adult Education Act (PL 91-230), which delivers money from the federal government to the states to sponsor adult education classes. This law stipulates that a certain percentage of adult basic education dollars be spent on experimental/demonstrations and/or teacher-training projects. The project was funded through the California State Department of Education's Adult Education Unit.

The project was funded for two years in 1975--we actually started in August of 1975--and we ended in June of this year, although we were given a 45-day extension to permit us to produce 40 copies of the materials that were developed.

The program involves adult basic education, but with a vocational twist. So please keep an open mind in considering how you might use the materials we generated and used.

The ACE project grew out of a concern of the Career Preparation Centers in San Mateo County. These are two Graduate Equivalency Diploma (GED) testing, tutoring, and counseling centers. They handle 1,200-1,500 people a year, assisting out-of-school adults to obtain their GEDs. Of the people who come to study for the GED, about 20 percent are reading between 0 and the 6th-8th grade. When they are confronted with the fact that they have reading problems, they generally discontinue studying for their GED. Our suspicion was that this was because we were talking to them in our terms as we saw reading. We said, "You need word attack." Few adults know what "word attack" is. We said, You need reading comprehension." What is "reading comprehension" to an adult? We had no way of discussing the skills the adults needed in terms which were meaningful to them. We thought this was one block to our being able to retain students.

The GED is a long way off for people with low reading skill. We felt that non-reading adults find the road to reading long, vague, and unrelated to their real world.

Our hypothesis in writing the project was that if we could learn exactly what reading and math skills people need to work. we could build a meaningful program around those skills. The first thing we did was to go to the Dictionary of Occupational Titles (DOT), the Bible of the job world. Exhibit A is what we found in one case (Body Fender). It has excluded any reference to math and communication skills. All the verbs describe the job-specific actions. They relate to the functions a person does on the job.

In order to address the problem of what academic skills surround this job, the DOT gives a one-page General Educational Development matrix for all occupations, listing on the left-hand side levels one through six, and across the top Reasoning Development, Mathematical Development, and Language Development. Body Fender is described as a three. That means, as far as Mathematical Development, the person should make arithmetic calculations involving fractions, decimals, and percentages. As far as Language Development is concerned--and here I think it is particularly difficult for this method to describe the academic tasks--the matrix indicates, "comprehension and expression of a letter to file, post, and mail; copy data; interview members of households to obtain such information as age, occupation, and number of children, to be used as data for surveys and economic studies; guide people on tours through historical and public buildings describing such features as size, value and points of interest." Can you imagine yourself as a basic skills instructor telling a person interested in becoming a body fender repair person that these are the skills he needs? It's not going to help.

The DOT also lists the Specific Vocational Preparation, the amount of time it takes to become trained in the job-specific skills listed in the initial definitions; it doesn't really address academic skills.

Activities

So we wrote the ACE Project to:

1. Develop an ABE instructional model which capitalized on the relationship between reading and employability.

2. Implement the model.

3. Install the methods and materials in at least four local programs.

4. Disseminate a catalog of competency-defined job descriptions in a how-to manual describing their development and use.

Activities were divided into three phases. The first was to establish which were the 100 most frequently occurring entry-level jobs in San Mateo County. The second phase was to investigate the jobs and

Exhibit A

BODY FENDER MECHANIC

DOT CODE: 807.381

DOT JOB DESCRIPTION:

Repairs damaged bodies and body parts of automobile vehicles, such as automobiles and light trucks. Examines damaged vehicles and estimates cost of repairs. Removes upholstery, accessories, electrical and hydraulic window-and-seat-operating equipment, and trim to gain access to vehicle body and fenders. Places dolly block against surface of dented area and beats opposite surface with hammer to remove dents. Fills depressions with solder or other plastic material. Removes excessively damaged fenders, panels, and grills, using wrenches and cutting torch, and attaches replacements by bolting or welding them in position. Straightens bent frames, using hydraulic jack and pulling device. Files, grinds, and sands repaired surfaces, using power tools and hand-tools. Refinishes repaired surface by painting with primer coat and sanding it smooth. Aims headlights, aligns wheels, and bleeds hydraulic brake system. May paint surfaces after performing body repairs and be designated AUTOMOBILE-BODY REPAIRMAN, COMBINATION.

gather as much of the context--and this is the difference--in which the skill occurs; e.g., job site signs, labels, oral directions, forms, manuals, everything we could get which demonstrated the need for basic skills. These are the tasks that we use to talk to students about. We used the job descriptions to counsel students with a vocational focus and to establish instructional programs based on the skills detailed by the competency-based job description, in math, communication, and job-getting skills. In the third phase, we planned to incorporate ACE's methods and materials in four local programs and to disseminate materials.

The Competency-Based Job Description

Let us examine page one of the competency-based job description for Household Appliance Mechanic (Exhibit B). It contains information for the counselor--occupational title, DOT code, ACE number, a career ladder, the GED level from the DOT, and, very importantly, a site where the job can be observed. Primary research, I think, is essential at this point in adult education. It's very important to get ourselves out in the real world and see what skills are needed and used by our adult students. Students should be encouraged to establish, as much as they can, their own reasons for wanting skills. If they have done that, a lot of the work is out of the way for the instructor. Then more effort can be put into teaching, and less on motivating students.

We have listed the number of annual jobs likely to occur in San Mateo County. This is a cross between the Department of Labor's manpower projections for the San Fransisco Bay Area manipulated into San Mateo County projections and the California Employment Development Department's actual records for San Mateo County. This results in an estimate--not an actual figure--but it says something valuable to the student. It says that we care about the number of jobs out there, and that he should, too. It's good information. It gives the student the idea that reality counts.

The DOT description itself is something the counselor reviews with the student, step-by-step, in the initial process.

On page two of the competency-based job description for Household Appliance Mechanic (Exhibit C), the group of sentences on the right is a competency as defined by ACE. We believe a competency is a combination of the reason a skill is required, a clear statement of the skill, and a test item which demonstrates if the student has the skill. The competency is matched with the instructional objective in the left-hand column--that's our item of control. That item is keyed back to our taxonomy of Instructional Objectives. We assemble our instructional materials around the objectives in the taxonomy. The instructional materials are not job related. The third portion of the competency is very important--a test for the student, so that when we sit with him in that initial intake interview, we can hand him a pencil and say, "Do it." If it takes

EXHIBIT B

COMPETENCY-BASED JOB DESCRIPTION FACT SHEET

OCCUPATIONAL TITLE: Household Appliance Mechanic

DOT CODE: 827.281

ACE NUMBER: 25

CAREER LADDER

FIRST LEVEL

Household Appliance Mechanic

SECOND LEVEL

Appliance - Service Supervisor

THIRD LEVEL

Appliance Repair
Shop Owner

DOT's General Educational Development Level 4

SITE WHERE THE JOB CAN BE OBSERVED:

Nesco Appliance and Service
1722 Gilbreth Road
Burlingame, CA 94010

Herman Pinell, Mechanic
Tony Leskin, Supervisor

These materials were developed pursuant to a grant from HEW.OE under PL 93-380, Section 309. This does not necessarily imply endorsement of the content.

Number of Annual Jobs in San Mateo County 76 . This number is based upon the San Francisco-Oakland SMSA, U.S. Census Manpower projections and the quarterly employment security application record system reports on local San Mateo County Employment Development Department job opening activity.

Job Prerequisites: Application form; interview with emphasis on mechanical ability, neat performance in writing, rapport with co-workers

JOB DESCRIPTION (DOT): Repairs gas and electric appliances and equipment, such as refrigerators, ranges, washing machines, hot-water heaters, toasters, and irons, using hand tools. Disassembles appliances and examines parts for defects. Repairs defective parts, using hand tools. Advises customer on use and care of appliance. May estimate cost of repairs. May install appliances. Might be designated as ELECTRICAL-APPLIANCE SERVICEMAN: GAS-APPLIANCE SERVICEMAN.

THE ACADEMIC REQUIREMENTS FOR THE JOB OF HOUSEHOLD-APPLIANCE TECHNICIAN

Below are listed first in general terms and then in specific competencies the math and communication activities which a person must typically be able to carry out to function successfully as a household-appliance technician.

The right-hand column lists the exact competencies found to have been essential to the job in our on-site employee interview. This column also notes the skills which are prerequisite to those competencies.

The left-hand column* states the skills in more general language. The controlled language of this column permits comparison of skills between occupations.

*The items in the left-hand column have been abstracted from an abbreviated version of the taxonomy of generic skills developed by Kawula, W.; and Smith, A. De W., Generic Skills Handbook of Occupation Information, Training Research and Development Station, Prince Albert, Saskatchewan, 1975.

Exhibit C

INSTRUCTIONAL OBJECTIVES	JOB COMPETENCIES
1A.3 Given a series of numbers in numeral form (e.g., 10, 20, 30), be able to copy series in hand-written form with 100% accuracy.	The household appliance mechanic must be able to order new parts to replace work or broken parts. To accomplish this task, the student must be able to copy parts numbers from catalogues onto order forms. To demonstrate the ability to perform this task, the student will copy the following parts numbers with 100% accuracy: 4795164 8810345 7979160 3221437
1A.4 Write a whole number less than 10 million given the word name of the number.	See 1A.5.
1A.5 Count a set of up to 100 objects and state or write number of objects counted.	The household appliance mechanic must be able to verify the number of items delivered from a parts house. To accomplish this task, the student must be able to count a set of objects and write the total. To demonstrate the ability to perform this task, the student will count the number of books on a table and write the total on a piece of paper.
1B.1 Perform additions of whole numbers given instruction such as: What is the total of 5 and 8? 8 + 5 = _____. 8 plus 5 is _____. Find the sum of 8 and 5. Add 8 and 5.	See 1B.2. 8 + 5

15 minutes, we have to talk to him about whether or not a job situation will allow that kind of time for the accomplishment of a task. If he makes a mistake carrying ones or dealing with zeroes, we can start identifying those sub-skills needed. If he doesn't, we can say, "Congratulations!" and check that competency as accomplished.

Every student has his own copy of the job description, so we can mark it up and make notes on it.

The second item in the right-hand column is "See 1A.5". Matching it in the left-hand column is Instructional Objective 1A.4. This explains that 1A.4 is a prerequisite skill to 1A.5.

We tried to include as much of the job-related academic tasks as we could--the visuals, the rulers, and the meters, and the material that lets the student know that we were talking about the job they had in mind.

The job description lists the math skills needed on the job and then the language skills needed.

ACE Student Process

How do we use the job description? The first step is to bring the student in for counseling. Some pre-testing happens during this time; we found some very simple tests that gave us a feel for roughly what a student's reading skills were. The student goes into counseling, where he takes a look at himself--the skills he has used in the past, what his short-range job goals are, what his long-range job goals are, what the labor market for those skills is, and what skills various jobs demand. We know that a student is through with that initial phase of counseling when he has settled on a job that's realistic, and he has achieved some degree of job focus and commitment sufficient to release the energy needed for a lengthy instructional program. The counselors try to motivate the students. We want the students to be in control of the program; we put the responsibility on them; but we have to get them to a point where they can do that.

At that time, too, the student reviews the job description from a counseling point of view, responding to his interest in each of the academic and job-related tasks.

The project instructor then develops a Student Competency Profile, based on the job description. The Student Competency Profile provides a graphic way to show what the student needs to do and can already do. Numbers on the profile represent Instructional Objectives.

The instructor checks off the Instructional Objectives called for by the job description. As we test the student, we can record what he can accomplish. In talking to the student, we check off in red anything

that he wants, because if he wants it and sees a reason for it, we don't need to--that's sufficient commitment for us.

From there the instructor selects what we call Student Assignment Cards. These detail a specific instructional program for the student. The Student Assignment Cards indicate whether or not a skill is required for a specific student, the Instructional Objective code number, and a summary of the objective as well as the criterion to be reached. When an objective is reached, the objective is signed and dated. This basic skills management system permitted us to individualize instruction for many students at one time without confusion.

The counseling workshops focus on four areas:

1. The student looks at himself. During these sessions the student goes through a very thorough self-assessment, establishing and examining as many as possible of his accomplishments.

2. The student looks at jobs. Using the DOT and other sources of job information, the student explores the kinds of jobs which exist, what people do on those jobs, and which ones are in demand locally.

3. The student plans his career and educational goals. Using information gathered from the above activities, the student plans his career, examining those educational requirements which various careers and jobs demand.

4. The student prepares for a specific job interview. Using the "informational interview" and other techniques, the student prepares himself for a job search. This involves resume writing, application completion, interview skills, and locating the hidden job market.

I'd like to review the ACE student process. The student enters a short initial counseling phase. Once he has established tentative job goals, he examines the job description to see what academic skills are required. He is tested on those skills and a program is developed to teach him the skills he is lacking. These are recorded on the Student Competency Profile, as is his progress. He works at the various skills and continues attending the counseling workshops. As he achieves a skill, he is brought back to the job description for post-testing. Once he has completed all the academic skills required by his selected job, he passes on to a job, to a training program, to regular adult education classes, to a new job description, or on to GED study.

Comments and Suggestions

1. If you are interested in developing a competency-based curriculum, research the field. Find out from ERIC what has been

done. Writing the measurable objectives necessary for competency-based curriculum is particularly arduous. If you do thorough research, you will probably find that work has been done in your area. You will have to adapt it to your situation, but adapting is a great deal easier than generating a new curriculum.

2. Do primary research. Validate what you find in your research with primary research. Get your teachers out into the world of work to find out what skills are needed on the job. It will help you, your teachers, and your students. It will give them a new perspective and a renewed sense of relevance.

3. Involve counseling in your instructional design. As people learn job skills and job related academic skills, their perceptions of themselves and their capabilities (and, therefore, their potentials) change. Be ready to capitalize on these new insights to help students make the most suitable career plans.

4. As you build your new curriculum, plan to recognize and credit students with the skills they bring to the school setting. In an attempt to work in the diagnostic/prescriptive model, don't fall into the trap of talking to students only about the skills they need.

   We, and they, can learn a great deal about them as learners if we spend time helping them see themselves as skilled in some areas. By recognizing that they have been successful learners in the past, we can capitalize on that energy to generate new learning. We can also pick up information on their learning styles to share with them and to help us plan instructional programs that work for them.

In Closing

I'd like to show you a dramatization of what happens to a student who comes into our program. It's an idealization, it's not a real thing; none of our students actually fit this model. But it takes you through every step and it gives it to you in a human way, not an abstract way.

Script from Slide/Tape Presentation

J.R.: Hi, I'm James Reynolds, and I'd like to tell you something that happened to me awhile back. You see, I had been working as a bus boy for about five years when the place I worked at decided to have the waiters and waitresses do my job. Well, I really liked working there so I tried to become a waiter but it was tougher than I thought. I needed better reading, writing, and math skills to do the job. I'd already known that I had to improve these

skills and I had taken some night classes, but I never seemed to learn very much. The teachers either went too fast or too slow and I got confused or bored. Then I heard about this school called ACE where I could learn at my own pace and just study things that were important to me, like the reading and math that I would need to become a waiter. I found out later that ACE knew what skills I needed as a waiter because they'd actually interviewed a waiter and asked him a lot of questions about just what math and reading he had to do on his job.

The Project Director: The ACE project had interviewed people working in the most frequently available entry-level jobs in San Mateo County. They spent an hour and a half with the worker at the job site and learned what math and communication skills he needed on the job. ACE asked such questions as: In your work do you count? In your work do you add or subtract? Multiply or divide? Round-off numbers? Do you solve problems like determining the percent of a number? Do you read labels on common products? Do you fill out a time card? The interviewer also recorded the reason the skill is needed. The interviewer collected copies of job-related materials --forms, signs, labels, manuals, charts and graphs. The information was then written into competencies and matched against instructional objectives. These tasks were assembled into competency-based job descriptions.

J.R.: The first time I saw one of the ACE job descriptions was when I talked to the ACE counselor. First, though, she wanted me to be sure that the waiter job description was the one I wanted to work on.

The Counselor: I'm Linda Kurtz, the counselor for the project. After James called for an appointment, I explained the ACE program, that it is an academic skills training program, and I got some basic commitments from him on his willingness to expend a certain amount of time and energy working toward gaining these basic academic skills. Then I presented him with some vocational counseling exercises to assess his interest in different job areas. James's responses indicated an interest in the service skilled occupations which confirmed what he said about wanting to work with people. We discussed the job of waiter as to how it fit in with the service skilled occupations and set up an interview with a waiter and his supervisor so that James could find out, and confirm for himself what the physical and academic requirements of the job were. James needed a lot of work on interviewing for a job and assessing his skills, so I set him up to attend our weekly job development workshops to work on such things as skills identification, application filling out, methods for gaining information about different jobs, and job interviewing techniques. He agreed to meet with me individually as well so that we could periodically assess his progress. I then referred him to our instructor so that she might more fully explain the academic requirements of the job description and determine those skills James already had.

The Instructor: Once James had focused on a job goal, we used the waiter job description to determine James's skill level. James tried each of the competency tasks on the job description and discovered for himself those things he could already do and those things he could not yet do. For example, James tried writing out a sample order slip to determine whether he could accomplish competency 22E.4 in the job description. This test required a variety of skills--reading a menu, writing the words from the menu, adding the total, computing the sales tax as well as completing the order form itself. James found that this and other competencies required skills he had not yet mastered. We noted those skills James possessed and those he had yet to attain to satisfy the job description of waiter on his student competency profile. We talked about where he would begin and what lay ahead. I selected the assignment sheets corresponding to the competencies required for his job description and put them in his folder along with his competency profile sheet so that his tutors would have a record of his progress as well as a general overview.

J.R.: After I met with Jan to go over my instructional program, she introduced me to Mike and Penny, the two instructional aides who would be helping me with my reading and math skills and giving me the competency tests if they thought I was ready. I've been at ACE for about three months now, and it would take a pretty long time for me to explain everything I've worked on, so let me just tell you what I did last week at ACE. My scheduled time at ACE is Monday, Wednesday and Friday from 10 o'clock to 12 o'clock. I work on math at 10 and reading at 11. Monday, I met with Mike at 10 as usual . . .

M.: Hi, James.

J.R.: How ya doin', Mike?

M.: Uh, pretty good. Every time you come in now, we'll have you fill out this time card. It's similar to one you might have to fill out on the job. You need to write what time you came in, and then when you leave, you'll put what time you left and how long you were here, so you have to be able to figure our time. The numbers on the side are for what day of the month so you need to look at the calendar and figure out what day it is and be sure to write your times in the spaces next to that day.

J.R.: Hmmm. I never had to do that before. We always had, you know, the kind that you punched in, so, I don't know, maybe it might be useful if I go to work some other place where they had me filling it out myself.

M.: Yeah, this is sort of a doing thing instead of an instruction

thing. Why don't you pick up your folder, and go in the small room in back where it's quiet and try this test?

J.R.: OK.

. . . Well, how'd I do on that test, Mike?

M.: You did real well. I don't think you're gonna have any problems making change.

J.R.: Yeah, I think the workshop I went to really helped.

M.: Well, that just about finishes off decimals now. So . . . let's take a look. Let's write this in and see how far you've come now. You've just finished decimals. And you've finished all your whole numbers. So . . .

J.R.: Boy, I've come pretty far. When I first started here I didn't think I was going to be able to do all that stuff.

M.: Yeah, you've come a long way.

J.R.: Well, what's gonna be next?

M.: Well, the next thing we're going to do is find out what a percent means and how to do 'em . . . how to figure out like sales tax or discounts.

J.R.: Yeah, I'll have to be able to do that kinda stuff, huh?

M.: Yeah. It won't be too tough, though. It's mostly just multiplying with decimals. Anyway, we'll start on that next time. It's just about time for your reading instruction.

Penny: Hi, James.

J.R.: Hi.

P.: Uh . . . OK, the next thing we're going to do is work on filling out applications and other forms, so I want you to try filling out this application, and then we'll go over it together.

J.R.: OK.

P.: OK, James. Are you through with the application?

J.R.: All done.

P.: And how do you think you did?

J.R.: Well, I think I did pretty well on the education and employment

history kinds of things 'cause, you know, I've filled out other before working on things like that, but I had trouble on a few spots. There's some words . . . uh . . . I'm not sure what they are.

P.: OK. Let me take a look. Like what words did you not recognize?

J.R.: I'm not sure what . . .

P.: Oh. That's 'spouse'. Do you know what a spouse is?

J.R.: Does that mean like your wife?

P.: Right. Your wife. It means husband or wife. It would just depend on who's filling it out. And . . . Oh, that word? That's 'affiliations' and it is sort of like clubs, groups, you know, like in the community, groups outside of your job or school . . .

J.R.: Like the YMCA?

P.: Yeah. And you'd want to put that down because they sometimes like to know that you have outside interests. Well, OK, I've got something here called the Language Master that might help you with those words you don't know 'cause we don't have regular tapes like we did for all those sight words that you'd use in everyday life. These are more specific. You'd just use them for, you know, like filling out job applications. Anyway, what you do is take the card, put it in the machine, and you'll hear me saying the word at the same time that you're looking at it while it goes through the machine. So look through this stack of cards and decide which ones you don't know by sight, and which ones you need to learn. Listen to them until you know every word well enough to say it before you hear it.

J.R.: Uh, will we go over the meaning afterwards?

P.: Oh, yeah. I want you to include in the pile any words that you don't know the meanings of as well as the ones you can't pronounce.

J.R.: Will I have to learn how to spell them, too?

P.: No, not right now anyway. We can work on that later if you want to, but this exercise is just so you'll recognize them on the application. Oh . . . and another thing you might do. Have you been going to Linda's workshops regularly?

J.R.: Yeah.

P.: OK. There's one tomorrow that would be really helpful for you. She's not going to be talking about things like using the phone book and the want ads to contact people like in the other workshops, but she's going to have a man come in who does a lot of

interviewing for his company, and he's going to give you some ideas on what you should say and shouldn't say, how to look and just a whole lot of tips on how to handle yourself in an interview so if you can make that, it's tomorrow at 11.

J.R.: Is he an employer that gives interviews?

P.: Uh, he's the head of the personnel department where he works so he's the guy that knows.

J.R.: What, like stuff they look for?

P.: Right, and I think it would be worth going to do -- going to, so try to make that tomorrow, and I'll see you Wednesday.

J.R.: OK. Bye.

P.: Bye.

J.R.: I went to the workshop as Penny had suggested and found out a lot about the "do's" and "don't's" of interviewing for a job. I met with Mike and Penny again on Wednesday and Friday at my usual time, and Friday afternoon I went to a workshop on map reading. It was different from the counseling workshops that are given in a weekly series. The counseling workshops are mostly about getting a job and the instructional workshops are about things people need to know in everyday life. They're not given on a weekly basis, and each one is about a different skill, like telling time, using a calendar, or balancing your checkbook. The one that really helped me was the one I went to a few weeks ago on making change. There we actually got to handle real money and count back change. I thought I would probably have to do that if I got a job as a waiter. There were other students there who were interested in cashiering jobs and other jobs that they might have to count change. Some people were there just because they thought it would be a good idea to know that.

Throughout the time I've been here at ACE, I've been meeting with Linda and attending her workshops. Counseling has helped me get a better idea of what I want to do, and it's also shown me that there are many more possibilities than I first realized. Jan and I have looked over the job description of waiter again, and we both feel that I'm very close to finishing it. I've passed a lot of competencies since I've been here at ACE.

Well, thanks to ACE, I feel confident about becoming a waiter, but the most important thing is that I feel confident about learning. Maybe I'll choose some other job goal. I think I can handle it now.

(END OF SCRIPT)

THE ADULT PERFORMANCE LEVEL APPROACH IN ADULT VOCATIONAL EDUCATION

--PANEL PRESENTATION--

Buddy Lyle, APL Project Director
The University of Texas
Austin, Texas

Rosemary Dawson, Coordinator
Competency-Based Diploma Project
Los Angeles Unified School District
Los Angeles, California

Harry E. Frank, Associate Professor
Vocational and Adult Education
Auburn University
Auburn, Alabama

Overview
(Buddy Lyle)

What this panel would like to accomplish is to give you an overview or a comprehensive look at what the Adult Performance Level project is all about. Very briefly, it is a competency-based approach to functional literacy. We hope to establish the basis and grounds for a happy marriage between the competency-based approach to functional literacy and the competency-based approach to vocational education. There are definite implications for some good things to happen, should that marriage take place.

There are some people in this room that I know are quite knowledgeable in the Adult Performance Level project and concept. Mr. Lee from Kansas was on our original National Advisory Council. Norma Brewer was in on our initial attempt at developing curriculum for the APL program. Karin Whitson, formerly from Texas A&M and how here at The Center, has worked very closely with us on the project.

Let me now present the slide/tape program.

(Slide/Tape)

As an update, at last count I think there were well over 100 projects across the nation that were funded through 309 monies in the Adult Basic Education programs to work in the area of either APL and/or competency-based education. In Texas we are basically out of the research

phase. We are into programming. Over the last couple of years we have been working on curriculum and we are operating in adult education pilot sites now. We have seven sites that are working with the APL curriculum in their regular Adult Education programs. We have been able to pilot a competency-based diploma program for adults in 10 sites in Texas.

There are some exciting things going on. This coming year what we hope to do is bring the resources of the Manpower programs, vocational education, the competency-based diploma programs, and the regular adult education programs to bear on offering those services that disadvantaged adults need in the sites in which we are operating.

APL Linkage with Adult Vocational Education in Alabama
(Harry E. Frank)

Some time ago I was reading the mail, and I saw this article about the Adult Performance Level study. I thought, "What's the government throwing money away on now?" Then, I observed the practicality of the study and I thought maybe I could answer some questions contained in the material. I thought, "Goodness, this must be a real good test, because I can answer some of the questions!" That sold me on the APL-related programs.

Theory Into Practice

We in Alabama and Auburn University got to working on APL and competency-based education. I want to emphasize the implementation of competency-based education that has been brought to us through research of both the Vocational-Technical Education Consortium of States (V-TECS) and the APL studies. I think that it is extremely important that we try to implement research findings. We have had a lot of good ideas in the past, for a short period, backed with much publicity and enthusiasm, but a couple of years later we have forgotten them. Well, we can't afford to do that with these two areas in adult vocational education.

I was a vocational teacher before I became a college professor, and have enjoyed my experiences in both fields. Being a college professor gives me an opportunity to develop implementation techniques based on research. People are always talking about the lack of practicality of the Ivory Tower. Sometimes I think the Ivory Tower is ready to take on some innovative projects about as quickly as some of the people out in the field.

What we are trying to do--and I think it's an important consideration for many of our universities and state departments of education--is to look at how to get from theory to practice. What vocational people talk about a lot of the time is this business of getting theory applied in the real world. Let's put theory into practice. We have adequate theory to provide the base for improving adult vocational education.

Support Needed

The APL study and the V-TECS efforts have helped us in getting educational needs identified. We now have studies to support and give us some guidance across the gulf separating theory and practice, and we need some support from two groups. One of these groups is the practitioners. We need to get instructors to meet some important educational needs through the use of APL and V-TECS guides.

Another group from which we need support is the administrators. It's really strange that we have less preparation for administrators in vocational education and adult education than in lunchroom management. Maybe we need to get our APL work V-TECS catalogs and acquaint administrators with them. We need their support in curriculum development. Some way we have to let people know what we are about and what might be done to improve adult and youth vocational instruction.

We need support from learning resources personnel, who need some knowledge of APL. Exhibit A presents the APL matrix. Our instructional guides were developed by practitioners over a period of time. They include suggested learner activities, teacher activities, and learning resources on each of the APL identified tasks. We worked on this project for 2½ years and we have had revisions since then. The teachers would try these guides and then make some adjustments. We thought that was a desirable basis for making changes. We had experts in the field help with the technical areas. We also utilized appropriate input from learners.

Program Development

We developed some materials based on APL for persons with limited competence in reading comprehension and ability. These were developed by a couple of our people in their graduate studies, working on a one-to-one basis with some non-readers. These projects have implications for several levels of learners. The APL content might be altered for the people who are up on "silk stocking row"--for example, with consumer economics--and we do have a lot of these people with many needs.

This is not just an adult basic education program. If our learners are incompetent in the identified tasks and we have learning resources and some enthusiasm among the teachers, we can help the learners in becoming competent. In our instructional guide we have listed for each task the instructor activities, learning activities, and the resources that might be used in teaching. These are instructional guides, they aren't the last word--there must be adaptation to the target group of people with which we are working. That was our approach in developing the guides.

We have a project that we will be working on this next year, funded by USOE. What we are going to do in this project is to find out from

Exhibit A

ADULT PERFORMANCE LEVEL MATRIX

		KNOWLEDGE AREAS				
		OCCUPATIONAL KNOWLEDGE	CONSUMER ECONOMICS	HEALTH	COMMUNITY RESOURCES	GOVERNMENT AND LAW
BASIC SKILLS	COMMUNICATION					
	PROBLEM SOLVING					
	INTERPERSONAL RELATIONS					
	COMPUTATIONAL SKILLS					

some practitioners and people who have been using APL what they would suggest for a model of infusing APL into vocational and adult programs.

We have a good administrative set-up at Auburn University, because we are the Department of Vocational and Adult Education. This makes resource persons available; we have contact with a lot of students who are not only adult educators but are adult vocational educators. We feel that this is an excellent opportunity for us to work with that selected group of practitioners.

Infusing APL Concepts

As indicated earlier, we are going to attempt to infuse APL into adult vocational programs. We will use the APL Commercial Assessment Estimate printed by the American College Testing Service as a pre-test and post-test. The A section of the tests will be used prior to the 71 hours of instruction and we will check individual competency at the end of that time with the B section. We are trying to get this information on 10 classes of adults.

We are going to work with teachers, provide APL-related training, and develop some specific competencies that have been identified as being important for persons who are working with competency-based programs, including the APL related instruction. We have endorsed some of the competencies suggested by Mocker in Kansas and will try to develop them.

All participants will become acquainted with the APL concepts and their relationship to education. Some of the people that we worked with previously utilized the APL assessment instruments to help adult students locate their areas of need.

In other areas we will help instructors select curriculum that will provide adult learners with skills to become a problem solver in all knowledge areas, with special attention given to occupational knowledge.

Even though several of our adult educators have worked extensively to get APL incorporated in their curriculum, many adult students who have a definite goal, such as passing the GED, are going to be less apt to want to spend time on APL. We need to work with those people who have a negative attitude toward APL and try to create a climate that will encourage learners to participate. Sometimes people don't participate because they are unfamiliar with the implications for their self-development.

Our main concern in this new project is to infuse APL concepts into adult vocational programs. Our project will be conducted next year with the post-secondary adult vocational groups.

We worked with a similar project last year with a formal course

enrolling 10 teachers that were working with APL infusion into adult programs. Some were vocational, some were not. During the course, the teachers in Madison County Alabama made out plans for infusion and then they carried these out and reported to the project director. They were working with many different types of learning situations, and the one that didn't work was with those pursuing the GED. Others in horticulture, home management, and several other areas did use the APL curriculum to some extent.

The Future

The main thing that we need to look at is that while working with adult groups, we ought to consider needs, not only in the vocational field, but in related fields. You have an opportunity to include APL in adult vocational programs. Many adults will choose this type of learning if given a choice. One thing we will work on in the future is to have specialists in an area come in for one hour of instruction with adult groups. These specialists will help develop those competencies needed to support the vocational competencies. We worked with two national seminar groups in Auburn previously. Our project for next year will include contacting people from those groups--and I would like to hear from some of you--regarding how APL has been infused into other programs so that we can learn from them. Hopefully, we will have definite data on vocational education for adults which includes APL concepts.

COMMENTS BY BUDDY LYLE:

Let me make a comment about one thing Harry said about an APL curriculum in a GED program. The jury is still out on whether that's going to work or not, but we did work with 10 learning centers in Louisiana last year. They ran an experimental class using the APL curriculum and a control class using the traditional pre-GED instruction. They just got the results from those 10 pilot sites and compiled them. On a very limited sample (160 students), people in the APL instructional program showed significant gain both on the APL test and on the California Test of Achievement (adult level). So we feel this may say something as to whether or not the curriculum can be used in a pure GED program.

Life Skills for Job Success and the Adult Competency-Based Diploma Projects

(Rosemary Dawson)

The Division of Career and Continuing Education of the Los Angeles Unified School District is engaged in two competency-based education projects. The Adult Competency-Based Diploma Project was begun approximately two years ago and components of that project will be pilot tested

this fall. My remarks today are addressed primarily to the Vocational Education Act (VEA) project, "Life Skills for Job Success," which will begin October 1, 1977. Many of the procedures that were used in the Diploma Project will be replicated in this new project. The processes applicable to any competency-based program being developed are the focus of this presentation.

The Problem and the Need

The major premise on which the VEA project, "Life Skills for Job Success," is based is that many people who are competent or even proficient in skills strictly related to job performance are not successful in the world of work. This is because they are incompetent in the everyday life skills which affect a person's ability to complete vocational education programs, to enter the labor force, to retain a job, to advance on a job, or even to be satisfied as a worker. Although it is widely recognized that job preparation should not be limited solely to the acquisition of an occupational skill, traditionally and currently, occupational training programs are primarily concerned with training for specific job skills. There are several reasons why this is true:

1. There is a limited amount of usable curriculum materials which adult educators can use to provide the kinds of instruction in functional competence that their students need.

2. There is a lack of instructional management plans through which vocational students can receive the kind of academic or functional competency instruction they need.

3. In many programs vocational instructors are under pressure to place students within a given period of time. In some programs, for example, 72 hours are allocated for training. The vocational instructor wants to be sure that the students have those job-specific skills needed for placement. There appears to be no time for anything that is not directly related to the occupational skill.

4. There is an inability of many teachers to utilize the concept of functional competency, which involves an interdisciplinary approach in the teaching of life skills.

These areas are the needs to which "Life Skills for Job Success" is addressed. A reoriented approach to vocational education must be supported by the materials, delivery systems, and inservice programs required to make it a reality.

A Model of Functional Competency

The first process I want to discuss is the development of a model.

About 18 months ago when we decided to conceptualize what is meant by functional competence within the Division of Career and Continuing Education, we developed a model which differs from the well-publicized model designed by the University of Texas at Austin in the Adult Performance Level (APL) Study. During our model-muddling we decided that the primary change we wanted was to make the model learner-centered, i.e., to put the adult learner in the center of the educational program, in the middle of the curriculum.

Others in this workshop have mentioned the importance of humanistic education, that it is important not to leave out interpersonal skills and the affect. By including "YOU and YOU VALUES" our attempt is to recognize that the student comes into any educational program with a set of values. One of the initial activities, therefore, in which a student will be engaged during the program is value clarification which will lead to goal setting, and then to assessment.

Building out from the learner as the center are the basic skills. Some of these are the traditional communication and computation skills included in the APL model (You, the Reader, the Writer, the Listener, the Speaker, and the Computer). To these have been added the Interactor (interpersonal skills), the Chooser (decision-making and values), the Problem Solver, the Creator (creative processes), and the Doer (psychomotor skills). These 10 basic skill areas are those each student is to develop and apply. Again, the terminology for the skills is learner-oriented rather than subject-oriented.

These skills in isolation don't help the student much to function effectively in everyday life. It is in their application that they become important, particularly to adult students. Therefore, each of the 10 skills are applied in each of the six content areas defined by the Model. Some of the content areas are basically the same as in the APL model--the Citizen (APL Government and Law), the Worker (APL Occupational Knowledge), the Healthy Person (APL Health) in which both physical and psychological health are included, and the Consumer (APL Consumer Economics). To these have been added You, the Home and Family Member, and the Utilizer of Leisure. Competency in the utilization of leisure was considered vital in view of future shorter work weeks, longer lives, early retirement, and a greater array of leisure activities. Constant changes in the values, structures, and functions of the home and family emphasize the need for competence in this area. The area of Community Resources in the APL model is subsumed in each of the six content areas of the Los Angeles model. For instance, Citizen competencies were written for community resources related to citizenship.

When we have a fully-functional competency-based Diploma Program, our students will demonstrate the 10 basic skills, a core set of the functional competencies, and then each student will choose one specialization. The options include advanced academic, vocational, and avocational.

Thus, the Los Angeles Model establishes the learner as the center of the program, identifies the components of the program, and shows the relationships between the learner and the learner's skills, content area competencies, and advanced specialization.

Development of a Pool of Functional Competencies

"Life Skills for Job Success" and the Adult Competency-Based Diploma Project are APL-related but do not incorporate APL competencies and objectives as developed by the University of Texas. The development of the Los Angeles competencies drew upon APL objectives and those from a variety of other sources.

Another process we used is the development of a pool of functional competencies. In effect, this process describes how you could develop a pool of any kind of competencies. You don't have to start at ground zero; use what has already been done.

Many existing sets of instructional goals and objectives are available for traditional curriculum in grades K-12. There are few, however, which are solely concerned with everyday living skills required of adults. The sets of such goals, objectives, or competencies in the area of functional skills vary not only in terms of how they are stated but also in the types of skills included. Most include only minimal survival skills and none includes all of the skill and content areas considered to be vital to functional competency. Therefore, a comprehensive set of potential competencies has been developed. This set will be used in the competency rating activity with a wide range of educational constituents concerned with preparing adults for job success.

Although no one set of existing goals was sufficient, existing sources were used as a starting point. A team of teachers collected and studied goals, objectives, and competencies from a variety of sources. These included the Adult Performance Level (University of Texas at Austin, 1975), Central New York External Diploma Program (Nickse, 1975), Oregon Graduation Requirements (Fassold, 1974), National Assessment of Educational Progress (Citizenship, Basic Skills and Career and Occupational Objectives), Los Angeles Unified School District--Division of Career and Continuing Education course outlines, Educational Goals Catalog (State of California Department of Education, 1974), and a variety of instructional materials.

From these sources, statements were compiled which reflected application of the skills in the content areas. These statements were reviewed in order to eliminate duplicate ideas and to combine overlapping ideas. The remaining statements were reviewed and revised for comprehensiveness. Competency statements for topics not covered by existing sources were generated.

The next step was to develop sample performance indicators for each competency statement. These are illustrative of the ways in which a learner might demonstrate a competency; they are not all-inclusive.

Several further reviews and revisions took place. First, each of the content areas was reviewed by at least one subject matter specialist in the field. These subject matter specialists were asked to comment on comprehensiveness and note any omissions, to correct any errors in concept or terminology, and to make other suggestions as needed. The information from the subject matter specialists was used to revise existing competency specifications and to add new ones.

The total number of competencies is 139 with 19-26 competencies in each of the six content areas. Each competency specification was printed on a 5" x 8" card.

Competency Preferencing

In order to identify the everyday life competencies crucial to success in the world of work, a wide range of educational constituents concerned with vocational education will participate in a competency rating activity.

More than fifty decision-makers in Los Angeles, representing business, labor, government, and parent/community groups are members of the Policy Advisory Committee, sponsored by the Institute for Educational Leadership's "The Associates Program." These PAC members are identifying and exploring major issues in career education, and are developing plans of action and implementation to meet the needs of our community. Each of the five Regional Occupational Centers has an advisory committee to assist the administration in meeting their community needs. Five business and community representatives will be chosen from each committee to assist in this project.

Regional Occupational Center classroom teachers will be designated by their administrators to assist in this project, bringing to the group their professional expertise both as instructors and as successful members of the business/industrial work force.

To assess participants' educational priorities, a technique has been designed to obtain ratings for each of the potential competencies. Each person will receive a set of competency cards, four sorting envelopes and a directions page. The envelopes will be labeled as follows: (4) Crucial to job success; (3) Very important to job success; (2) somewhat important to job success; (1) Not important to job success. The envelopes will serve as sorting mats during the rating activity, after which the cards on each envelope will be placed inside the envelope. With this technique, the participants will not need to do the tedious, time-consuming task of tallying their ratings.

Development of Instructional Materials

On the basis of the competency preferencing activities, the 24 competencies which are most highly rated will be the topics of what we term Competency Achievement Packets or CAPs. CAPs are currently being developed for the Diploma Project and the same procedures and format will be used in the Life Skills Project.

1. Derivation of Behaviorally-Stated Instructional Objectives

   Having identified the everyday life competencies crucial to success in the world of work, the next major task will be to describe the specific outcomes that, if achieved, demonstrate achievement of the competency.

   Behaviorally stated instructional objectives will be derived from the competency statements. These instructional objectives will constitute the basis for selecting the specific learning activities, choosing the content for use in the development of the activities, determining appropriate and desirable modes for developing the instructional activities, and evaluating student outcomes.

2. Construction of Performance Measures

   The next task will be to specify the performance measures to be used to assess whether or not the instructional objectives have been achieved. Alternative evaluative techniques will be investigated, such as criterion-referenced tests, expert judgement, interviews, observations, review of experiential learning and performance tasks. Assessment measures will be constructed for pre and post-testing in order to use a diagnostic/prescriptive instructional approach. The measures selected and/or constructed to be used in determining learner performance will be evaluated according to the following criteria:

   a. feasibility
   b. sensitivity
   c. validity
   d. reliability
   e. interpretability

3. Specification of Methods

   Each objective will be analyzed in order to determine the most appropriate instructional strategy and the media to be used. The content to be presented, the practice to be provided and the media to be used will be prescribed. Community resources which are available to assist with competency acquisition will be included in the specifications. Strategy prescriptions

and media forms will be evaluated according to the following criteria:

a. probable effectiveness
b. relevance of content
c. economy of design
d. manageability

4. Development of Prototype Modules

The development of the prototype modules will include the collection of existing materials that may be integrated into them, the production of materials such as slides, audio tapes, or graphics, and the compilation of the materials which will make up the prototype modules.

5. Technical Review of Prototype Modules

As each prototype module is finished, a panel of pilot test personnel and advisory council members will review and critique the module.

6. Revisions, if Needed

The prototype modules will be revised according to the suggestions of the technical reviewers.

Pilot Testing and Evaluation of the CAPs

Our pilot test for the VEA project will be conducted at two regional occupational centers, one skills center, and a community adult school which has a vocational program.

Several kinds of formative evaluation data will be collected--that is the kind of information needed to make revisions in the CAPs. First is "implementation" data. "Is the CAP being implemented as planned or are other things being done with the materials?" Second is "achievement" dat "Are the students becoming competent?" Third is "attitude" data. "How do the students and the teachers feel about the CAP?"

On the basis of these data, revisions will be made as necessary.

Components of the Competency Achievement Packets (CAPs)

A student will not get an entire CAP at once. Rather, it will be set up somewhat like a kit with different components in separate files. A learner will first get an introductory section which includes a competency statement, a rationale addressed to the student (Why This Is Important For You), and information concerning other related competencies

which are part of the sequence. Also included in this section are the specific behavioral objectives, usually 3-6 per CAP. The basic skills that will be required are listed since there is a constant stress on the application of the basic skills to the life content areas. Any special vocabulary for the CAP that the student will need before working the CAP or will learn during the CAP are given.

In terms of assessment, pre and post tests for each objective are included. Diverse assessment techniques are used in a diagnostic-prescriptive approach.

In each CAP there is an Assessment Checklist. On the basis of the pretest for each objective and sub-portion of each objective, the instructor either indicates "competent" or "needs work." If the student is "competent", he/she proceeds to the next objective or to the next CAP. If work is needed, appropriate learning activities are assigned on the Record Page which lists all of the possible activities that a student might do. Most students will not do all of them. Some students require only a brief review and could receive a one-page summary. Others will need more sophisticated kinds of instruction, such as multimedia, programmed text, or group discussion.

A diversity of instructional modes is incorporated into the CAPs. The work is not individualized in terms of a student always working alone in a study carrell. It is individualized in terms of being diagnostic-prescriptive, in terms of allowing students to proceed at their own rate, and in terms of achievement levels being fixed.

A final section for the student is called "Putting It to Use." "I've learned it, I've demonstrated it, but how do I put it to use in my everyday life?" Some applications that the student doesn't have to do then and there but which provide ideas for applying the competency in everyday life close the CAP.

Management Plan for Linking Vocational Education Programs and Adult Education Programs.

Making available effective instructional materials to teach the everyday life competencies crucial to success in the world of work is not sufficient to insure that all students who need such instruction will get it. The current organization and scheduling of vocational programs frequently inhibits the vocational students' access to academic programs. Consequently, in addition to the development of the competency-based instructional modules, another major task of the project will be to develop, pilot test and evaluate a management plan for linking vocational education programs and adult education programs.

The accomplishment of this objective will be a joint effort of the project staff, the pilot test location teachers and administrators, the advisory council and students.

An analysis of existing methods of providing vocational and academic programs concurrently will be made. Those techniques which are effective will be considered for inclusion in the management plan. Other, more non-traditional delivery systems and schedules will be investigated. As a result of several planning sessions, a model plan will be pilot tested in the four locations. Formative evaluation data will be collected to determine how the plan is working. Revisions will be made as needed. Complete documentation will be maintained including student participation, attendance, progress and opinions, and the opinions of the instructors and administrators.

Inservice Training

Personnel to be involved in the pilot testing of the 24 competency-based instructional modules will attend indepth workshops in order to clarify the purposes and procedures that must be followed to insure that the prototype pilot testing is carried out as designed and to insure that the formative evaluation data collected are adequate. Four sessions will be designed and conducted to meet the needs of the pilot test personnel. These will be held every other month from January through July.

SUMMARY

"Life Skills for Job Success" is a bridge-building effort to span the gaps presently separating adult vocational programs and other programs which teach skills related to job success in order to prepare adults more fully for the world of work. At the end of the project, the competencies considered to be most crucial to job success will have been identified, 24 Competency Achievement Packets will have been developed, pilot tested, revised and validated, and a management plan to link vocational and academic programs for adults will have been designed.

ADMINISTRATION, DEVELOPMENT, AND OPERATION OF A COMPETENCY-BASED ADULT VOCATIONAL EDUCATION PROGRAM

William C. Knaak, Superintendent
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Before we can talk very descriptively about adult vocational instruction, I'd like to attempt a couple of definitions.

What is adult vocational instruction? To explain my feelings about this, I need to tell you a little bit about our 916 Area Vo-Tech Institute student body. We have in current enrollment about 1,800 full-time post-secondary vocational-technical students. Within that 1,800 student body group there are 139 clients of the Division of Vocational Rehabilitation, 123 clients of CETA, 68 from the BIA, WINN, SSCB, disabled VA and welfare clients, 47 that are handicapped and in the process of being evaluated, 18 are from Minnesota State Prison at Stillwater who are released daily to attend the 916 Area Vo-Tech Institute, 130 that are attending 916 AVTI programs inside the Minnesota State Prison that we manage and provide services for, 25 come from the Jamestown Residential Facility for chemically dependent youth, and four from the Ramsey County Workhouse. In addition to that we are a shared-time secondary school training center. We have 1,100 students coming in three shifts from 14 different senior high schools. Then we have an annual enrollment in what is more classically called the Adult Extension and Part-time Program of about 5,500 students. But at any given time, there are usually about 2,000 enrolled.

Going back to those 1,800 full-time post-secondary students and the descriptions that I have given, are these post-secondary students, are they adult students, or what are they? Within that group the age range is from 19-55. Included are a number of women in their mid-40s taking training in electronic data processing to become programmers, and they are in this full-time day program. In the adult part-time program in the evening, there are several 19-20 year old young women who started the regular day program but the job offers became too attractive so they left to take a job. Now they are finishing up the day program in the evening.

We also have a number of programs for people who are attending full-time, eight hours a day for perhaps two weeks. We run continuous training in emergency medical technician, a basic federal program, for policemen and firemen. They are attending full-time, but they're classified part-time due to the short-term training period.

Given that kind of a structure, I arrived at the concept that anyone who is over 16 and not enrolled in a secondary school is an adult. My remarks about the adult programming and competency-based education will be framed in that context.

What is competency-based adult vocational instruction? That's almost as difficult to specify, because there are a lot of different definitions around as to what competency-based adult vocational education is. But there seems to be some general agreement, at least on the first three. One is that there is some specification of learner objectives in behavioral terms in advance of the program operating. Second, there is the specification of the means for determining whether performance meets the indicated criterion level. Third, there's a provision of one or more models of instruction pertinent to the objective through which learning activities take place. The fourth is a little more controversial. This is the accountability factor for some public sharing. Fifth, there is the assessment of the learning experience in terms of the competency criteria. Finally, the placement on the learner of a considerable amount of accountability for meeting the criteria. In my research, I find good acceptance of the first three. In my opinion, competency-based vocational education requires at least those three.

I do not get very excited if people are writing behavioral objectives or performance objectives and sharing the objectives and calling this competency-based instruction. I think that's nice that they are doing it, but if nothing more is happening I don't really think that it is competency-based instruction. It's a first step.

There are quite a few things going on in the name of competency-based instruction that are not. I guess the best acronym that I've heard to describe that is SOT (some other thing). There are a lot of "some other things" going on around the country that are really not competency-based instruction. Typically, though, if they're meeting those first three criteria, I think that we can say that they are.

What is the relationship of personalized or individualized instruction to competency-based instruction? Must CBE be individualized in order to be competency-based? In my opinion, no. But I add an immediate BUT . . . if it is not individualized, you are preventing a lot of people from reaching mastery level because there is good research evidence that says that if your students are exposed to instructional experiences as a group, about 20 percent will achieve mastery this first time through. The other 80 percent who have not achieved mastery have not achieved a competency that is necessary for CBAVE. At that point, if you don't personalize or individualize, you've lost that 80 percent. Therefore, you can do competency-based instruction in groups on a fixed-time basis if you're prepared to sacrifice 80 percent of the students as not being able to meet mastery level.

How to Determine What to Teach

There are varying ways that this can be done. I know you've had some presented to you. I'm just going to tell you briefly how we proceeded at 916 AVTI.

Since we were a new institution starting a new program in an area where there were some existing vo-tech institutions, we used Manpower Department data to look at 72 occupational clusters. We arrived at average annual needs for new trained workers in the next five years, subtracted the current output from other institutions, and came up with the average annual unmet need for new trained workers. We deleted low-demand, high training output programs.

Then we also looked at program benefit/program complexity, out of state supply of trained workers moving into the metro area, student interest in the particular programs, and again deleted a number of programs. We arrived finally at 56 occupations in which we initially provided post-secondary training.

In Minnesota, we also have a Higher Education Coordinating Board, so all of the programs that we offered had to go through a full circuit of approval. This is designed to prevent over-supply and over-training in particular occupational training areas.

Q: How reliable was the Manpower Department data?

A: Quite reliable in the common kinds of occupations. You do not identify developing occupations that way. As we got more serious about each of the occupations as it filtered through the planning process, we then set up advisory committees from that occupation consisting of either people in the occupation or one step above it. We buffered the Manpower Services information against the advisory committee. Then we also looked at the out-state supply coming into the metropolitan area. We didn't make any mistakes based on the data we got from that combined approach. In the process of investigating we came up with other kinds of usable information. For example, we were considering the training of medical laboratory technicians and found that this need was being met, but there was a severe need for bio-medic repair technicians. The hospitals were finding it necessary to fly people out of Chicago portal-to-portal to repair their heart, kidney machines, and other bio-medic type machines. So the developing occupations didn't come out of the Manpower survey, but the basic ones did, and that was helpful. We used more informal means to identify the developing occupations.

On a continuing basis we work with the instructional advisory committees. We find these data, at this stage of our development, more informative and reliable than going back to repeat the whole survey again.

Rationale for Development of a Competency-Based, Personalized Vocational-Technical Instruction Program

International Concepts of Learning. According to Benjamin Bloom (1975), there are basically three international concepts of learning today. The first is the traditional one--there are good learners and there are poor learners and they can't change very much over the years. Second, there are faster learners and there are slower learners--that was regarded initially in the '60s as the Carroll theory of learning (1963). Under this theory, it said that if students are given more time they can learn most things. Secondly, once they learn they retain as well and perform as well as those who learn more rapidly. The third concept, which Bloom says is held by something less than two percent of the people in the world, is that most students become very similar with regard to learning ability, rate of learning, and motivation for future learning when provided with favorable learning conditions. That's a very basic and far-reaching concept.

The new concept of the mastery theory says that, given good learning conditions and time as needed, 75 percent can achieve mastery instead of 20 percent achieving mastery under traditional group-centered instruction. Research in Sweden found 20 percent of the students achieving mastery in a traditional program. They added a new curriculum and 30 percent achieved mastery. When they added new curriculum, teacher training, and a mastery strategy (meaning more time, extra approaches to learning), 80 percent achieved mastery.

Essentially at 916 Vo-Tech Institute, we are between Carroll's theory and the new Bloom theory. We are saying that, given adequate time and good learning conditions, we feel about 80 percent of the students that attend learn most things. However, we didn't use that initially as our major argument for a personalized competency-based system of learning (personalized and competency-based are used interchangeably within our system because we have a personalized competency-based system and I just don't want to use all the words all the time).

Educational Management Reasons for Personalized Instruction. Initially we looked at what we call educational management reasons for a personalized competency-based system. First, students are not required to repeat learning of skills and knowledge previously learned. Second, students can obtain immediate access to instructional programs; handicapped students can obtain immediate access; handicapped students can complete segments of programs which will help them become employable. The instructional staff can be used more efficiently as helpers to the learners rather than as information processors and dispensers. The building and instructional equipment can be used more efficiently. The placement of graduates in jobs is assisted. That means that we have an intake of students at the beginning of every month and we graduate students every month. There are people going into the labor market year-round instead of being dumped there in June. Students with a wide range of entry-level skills can be accepted. The content of instruction is available 24 hours per day for part-day students.

All of these are what I call educational management reasons for a competency-based personalized system. That has nothing to do with quality of instruction. We have maintained that an instructional system is not a quality system just because it's personalized or competency-based--quality has to be built into the system. If competency-based adult vocational education is not well done, if it is not well-conceived, well put together, it can be less effective than a traditional system--there's no question about that in my mind.

Educational Reasons for Personalized Instruction. There are, though, some good educational reasons for a personalized system. The learner progresses at his or her own rate to mastery. More learners achieve mastery than what is possible under group-centered instruction. The learner builds confidence by succeeding in learning. Students learn to help each other rather than compete for grades--the student doesn't have to be concerned that if he helps the other student he's going to break the curve. We get a lot of informal peer instruction going on. There's another thing also that goes on at the 916 Vo-Tech Institute that I suspect is related to this point. At a time when violence and vandalism in the schools of the country is almost a national scandal, at 916 Vo-Tech it is almost nil. Considering the diverse student body that we have (adults, including disadvantaged and incarcerated, and high school students all mixed in one institution), it does seem unusual. I don't have any good explanation for it, but I think there's a relationship there in this "helping each other" approach, rather than a competitive and antagonistic approach.

Other educational advantages of competency-based learning are: learners may speed up their personal learning; the presentation of instruction is assured to be constant; students can learn according to their preferred learning style with some limitations; and efficiency of the instructor is increased. The instructor performs as a manager of learning rather than as an information giver.

The 916 Vo-Tech Learning System

The 916 Vo-Tech learning system features learning guides and learning resources. Resources is a term that we use broadly to include all print, audio-visual, media, and instructional equipment; everything that a student needs to learn. The guides and resources are organized around objectives in 56 occupational programs, plus other mini-adult courses. Essentially the 916 Vo-Tech study body has open access to learning. The 916 Vo-Tech differentiated staff serve as facilitators and managers of learning. Their function is to bring together the learning materials and the students in a way that assists the students in their learning.

In the design of a learning system there are a number of variables that can be considered. Depending on what the system is, you might vary different things.

Variable Time. At 916, our major variable is time. We enroll students at the beginning of every month in the so-called regular 916 Vo-Tech program. We also enroll them on a continuing basis in adult programs (adult programs are operated 12 months of the year). We operate all full-time adult programs on a continuous stream, year-round. A student can take as much time as he/she needs, within reason, to complete the program. When I say, within reason, we do recognize that some students are in no hurry to get out of the Institute, and sometimes personal motivation may slack, particularly if the Veterans Administration or another agency is paying them to be there. So we do monitor progress closely.

We have what we call a student management system, which records their progress. It is a mastery-based system that records the work students are doing on a timecard. This timecard is entered into a computerized system and we provide a monthly report on a student, which supplements the instructor's on-going knowledge about the student's progress.

However, learning time is basically variable.

Fixed Content. The instructional content is regarded as relatively fixed in the full-time day programs in the sense that it is based on the needs of that occupation on entry-level into that occupation. Students cannot pick and choose content if they want mastery credit for the full program. They can choose which occupational program they want to get into, but having made that decision their instructional content is fixed.

Fixed-Variable Learning Style. Initially, learning style at 916 Vo-Tech was quite fixed, but it is becoming increasingly more variable. When I say it was quite fixed, I mean we initially had one learning guide and one set of resources for each of the tasks in the program. We're now bringing more variation into learning guides, and students and instructors also find ways to vary learning. In some cases where we have very excellent materials for students to learn from, an individual student will choose to watch the person sitting next to him/her and stay a day behind--that's his/her preferred learning style. That student uses the learning guide and learning materials then when he/she needs to review or needs to study the related cognitive material. This is acceptable within the system, is not regarded as "cheating," and does not affect the grade of the student being copied.

Fixed Exit Proficiency. We regard proficiency as fixed in the system. You can only have fixed proficiency if you have variable time. The proficiency levels are based on the needs for entry into a particular occupation. Across the 56 programs there's a lot of variation. It depends also on the task. For example, identification of the parts of a carburetor might be fixed at 80 percent; assembly of a carburetor after repair would be 100 percent--it has to work. So the exact level of proficiency depends on that particular task that's being mastered.

So the main variable of the 916 Vo-Tech learning system is learning time. Students may go more rapidly or more slowly depending on their particular inclination. We have a continuous stream instruction with students coming in at different times, going through the learning experiences, and graduating at the end. Graduation exercises are held twice a year for those who want to come back and go through it. It's extremely important to about 50 percent of our students that they go through the graduation exercise and they do come back for it regardless of when they exited. The other 50 percent couldn't care less. The percentage is really interesting because in five years, it has varied only a few percentage points.

An advantage of the competency-based system of evaluation is that students are working toward a pre-determined standard, not competing with each other for grades. We have only two grades--mastery and tested-out. Students know how they will be evaluated before they begin the task. Students may move on as soon as they demonstrate competency. Students may take as long as necessary within reason to perform successfully.

The 916 Vo-Tech Curriculum

The Programs, Job Tasks, Objectives, Learning Guides, Learning Resources, and Tests. Within those 56 training programs, we have approximately 5,800 job tasks defined. We use the word job-task like most of you use competency. For each task, there is a terminal performance objective. For each terminal performance objective, there are a number of learning objectives which we call micro-performance objectives. For each of the tasks a learning guide is developed to include individualized print and audio-visual learning materials, knowing and doing tests, and all the instructional equipment that is needed.

Development Procedures. When we are designing a program, we start with a job or a job cluster, work from the job description, and do a task analysis. At that point we consult with the advisory committee, which is our first validation. The advisory committee comes to agreement that these are the tasks of this occupation, or they say, "No, here are some more," or "You have too many," or whatever. After the advisory committee report, we write the terminal performance objectives. Then we develop individualized or personalized learning packages. For various reasons as an alternative we sometimes also develop a traditional lesson of instruction. The learning packages are tried out on the students to see if students can learn and pass the test--that's the second validation. The third validation involves being able to place students in the job for which training is given. The students then go out on the job. We have a one-year follow-up on the students after they enter employment. That becomes our fourth validation of the curriculum itself.

Looking more closely at the development of personalized learning packages, each task detail is evaluated to determine the most feasible method of instruction. Essentially, we work with the tasks; from the tasks we write a terminal performance objective; then we go back into the task details, sequence them, group them into micro-performance objectives (learning objectives); out of those learning objectives, the learning steps in the learning guide are listed. Then we use a variety of different kinds of resources in order to help the student learn.

The learning package then consists of a learning guide, which gives the directives. Then there are learning resources, there are written criterion exams, and there are performance checklists for the student.

The first page of the guide has the task identified, and we state a purpose. The purpose is intended to be the motivator to give the student a reason for learning that particular task. The second page lists the terminal performance objective which always has three parts: the givens (the things that the student is going to have to learn with), some visible performance, and a standard criterion exam or checklist. Also listed on this page are the micro-performance objectives or learning objectives that are associated with the details that are contained in that task. They are just identified on this page. On the following page we take that MPO #1 and print it at the top. Then we identify the learning steps, and the resources (Pucel and Knaak, 1975).

The learning steps are on the left and the resources on the right. The learning guide involves the student regularly with the instructor. The learning steps frequently direct the student to the instructor for evaluation or other checks and assistance.

We have the knowledge exam (knowing exam, as we call it). Those are in almost all cases a multiple-choice kind of test. Are they valid? They seem to be reasonably valid for our purpose, but as we try to improve and enhance the system, that's one of the things we are currently working on--the further validation of the tests we use. That is an on-going activity. Everything about this really has to be on-going. We're working very hard to improve and enhance the system as we go along.

We use checklists to evaluate the psychomotor skills. The checklists may involve a visual examination of the student as he/she performs the task. It may also involve an examination of the product produced. It can be either of those or both of those.

This has been a very quick trip through the learning system.

Follow-Up System

We do have a follow-up system. It is a statewide follow-up system in Minnesota. It does not involve all the part-time adult students, but it does involve all the full-time adult students. For each student that

we get, we fill out an additional form that goes into the state follow-up system. Whenever a student leaves we record that. Ultimately that student is followed-up on on a statewide basis.

Articulation Features

Secondary:Post-Secondary. Initially 916 Vo-Tech Institute started with the concept that we would use the same materials for the secondary and post-secondary to get complete articulation. We still do, but we've had to do some different things with them. We found, for example, that learning guides that were essentially designed for a six-hour day student do not always provide timely feedback for secondary students. We do not like a student to be in a particular learning guide more than two days without feedback. There should be some formal or informal evaluation going on. The 12-hour post-secondary module gets extended over a period of more than a week for a secondary student attending two hours per day. That was simply too late to provide feedback for the student.

So we put the secondary materials in smaller segments. Those segments still add up to the tasks and terminal performance objectives of the post-secondary, and secondary students still get full credit for what they have mastered. It is a way of remodularizing the material to get it in smaller units.

Full-Time Post-Secondary:Part-Time Adult and Extension. We have had to do some of the same kinds of remodularizing between these two groups as we did with secondary students. Some of the learning guides that we have did not fit with some of the needs of the adults. However, part-time adults are able to make progress toward and complete full certification, certificate of proficiency, or degree of proficiency, in the regular post-secondary program in the larger share of our post-secondary programs.

Progress reporting is mastery-based--the student gets a printout each month of the things he has mastered, of how he compares to standard hours (ahead or behind), and his percent of completion. When a student is reported at less than 67 percent of standard time, this is an alert for someone to talk to him--the instructor, counselor, whomever--to ascertain if there are any particular problems, or if this is indeed the student's normal learning rate.

Summary

In summary, I would just like to say that in moving to competency-based, personalized instruction you have to be prepared to answer the question, "Why do it?" There are a couple of major reasons. First, you can do much more for people if you are operating a personalized, competency-based system. Secondly, if you do it right, it can be a

superior learning system. People can learn more effectively from it, and far more people can learn from it.

"What to teach" should of course be job-opportunity-based. Deciding how to proceed in selecting a training system and training people to develop materials is a significant decision point. A major portion of the training materials at 916 Vo-Tech was initially developed by instructors in a new system--70 percent of them had not taught before, a little over half had baccalaureate degrees. But they developed the instructional materials. My suggestion is that if you have a model, people do not have to know a lot of learning theory to work the model. Many of our instructors developed some rather good materials by following the model. Then, as the instructors became more competent and more knowledgeable about learning theory, they have since improved those materials. We do stick rather rigidly to the structure that we have. Instructors do have a lot of room for their own creativity in developing learning resources to support the tasks, objectives, and so forth that have been developed.

We control tasks quite closely, too. We have a structured process if an instructor wants to change a job task. It has to go through the advisory committee, the instructional development department, and to the computer center. We do not try to make it easy to change tasks, but we make it possible. Frankly, we want the changes that occur to be in response to the changes in the occupation, not in response to what the instructor has become bored with teaching over a long period of time.

Finally, I would like to add a few words on learning system transferability. I mentioned the rather large amount of instructional materials that we have. Basically all learning materials at 916 Vo-Tech are available through the Minnesota Instructional Materials Center.* But it is not quite as simple as that. We have a specified procedure that you have to go through if you plan to utilize the materials in a very effective way. The reason for this is that if you order a learning guide and the resources require that you also have a videotape machine or certain textbooks, or whatever, the guide does not help you very much if you do not have the resources. Even if you can substitute other resources, you may have to look at the original resource first to see what the content is. We want to be cooperative, but there are some difficulties associated with acquiring the materials and we wanted you to be aware of them.

Other than that, essentially what we have is in the public domain. It is available from the Minnesota Instructional Materials Center, which is our state distribution center for vocational instructional materials.

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*Minnesota Instructional Materials Center, 3554 White Bear Avenue, White Bear Lake, Minnesota 55110.

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CHAPTER IV

ADULT EDUCATION RESOURCES AVAILABLE FROM THE CENTER FOR VOCATIONAL EDUCATION

This Chapter includes presentations by Patricia Winkfield, Glen E. Fardig, Bernie Moore, and John C. Peterson.

CAREER PLANNING PROGRAMS FOR WOMEN EMPLOYEES

Patricia Winkfield
Research Specialist, CVE

The Career Planning Program for Women Employees project has not been completed, and therefore I have no project materials that I can give you at this time. But I would like to give you some information about the project and how the products that are being developed might be helpful to you.

The Career Planning Program for Women Employees project is an 18-month project funded by the U. S. Office of Education, Bureau of Occupational and Adult Education. The project started in July, 1976, and is to be completed in December, 1977. It concerns career planning activities that will assist women in improving their occupational status. The need for such activities is evidenced by the employment statistics for women. More than 35 million women are now in the work force, and more than half of this number work because of financial need, not necessarily because they desire to work. More than 70 percent of all working women are concentrated in three occupational areas; service, clerical, and professional/technical. Although statistics indicate that women are in the work force in increasing numbers, they are still employed in low status, low paying jobs, and are not represented well in a large variety of occupations.

The project staff surveyed employers and community and junior colleges to determine what type of career planning activities were available for women employees. The employers were selected from Fortune magazine's listing of the 500 largest companies in the U. S. Community and junior colleges with student populations over 15,000 were also sent employer surveys. The total number of colleges receiving this survey was 152. Public institutional members of the American Association of Community and Junior Colleges, numbering 1,997 received an institutional survey. The grand total surveyed was 1,849. The survey requested information about career planning activities, suggested techniques, arrangements, and facilities. We received a total response of 29 percent--a response of 31 percent from institutions and 27 percent from employers.

The products being developed which may interest you and be helpful as you work with adults are: the annotated bibliography of programs which were identified through the survey, and the prototype or model program which will include effective career planning activities, techniques, policies, and procedures.

We're hoping that the products will be useful in helping educators and employers become aware of the need for career planning activities

for employed women. Perhaps the most beneficial product will be the prototype program since it will be helpful to adult educators who desire to set up a new career planning program for women employees or to redesign a program that is already in operation. The annotated bibliography could also be used in enhancing communication between program directors identified through the bibliography and those interested in setting up similar programs. Users of the bibliography would be able to contact these program directors, find out what kinds of problems were encountered, and how they alleviated these problems.

One of the most beneficial outcomes might be the communication and involvement between industry and educational personnel and the joint planning of career programs for women.

The products will be available in early November.

THE CENTER'S PBTE CURRICULA PROGRAM AND ITS RELATION TO COMPETENCY-BASED ADULT VOCATIONAL INSTRUCTION

Glen E. Fardig
Research Specialist, CVE

In this workshop you have been concerned with the principles underlying competency-based adult education, and the practices that have been found successful in exemplary programs. The Center's Performance-Based Teacher Education (PBTE) Curricula Program is directly related to some of the aspects of this workshop. We have some news that may be of particular interest and help to you as you plan and develop your own programs. I would like to tell you about materials that can be used to improve teacher performance in competency-based adult vocational programs.

The Center has been involved in a long and intensive research and development effort in competency-based teacher education (we call it performance-based teacher education). The results of this work are now becoming available to the profession in the form of teacher training modules. You may want to use these instructional materials in your school system or institution.

I think we can all agree that if competency-based adult education programs are to succeed, well trained, competent, and effective teachers are needed. Teachers just entering the profession must be specially prepared to work in competency-based programs. Experienced teachers who already work effectively in a conventional program setting will probably need to be given additional training in order to function well in programs using the competency-based approach. For both of these kinds of teachers, comprehensive inservice professional development programs may be the answer.

There is a great deal of logic in using performance-based teacher education (PBTE) to prepare teachers for competency-based instruction (CBI) in the schools. The two ideas have much in common. At both levels programs are based on the same fundamental principles, and both exhibit the same general characteristics. Only the instructional target groups and the subject matter content are significantly different. (See Figure 1)

In competency-based instruction in the schools, the target groups include secondary and post-secondary students, and the content includes occupational skills and general knowledge. In performance-based teacher education, the target groups are teachers, and the content focus is on teaching or pedagogical skills.

It is generally accepted that teachers teach others as they themselves have been taught. Therefore, it you want teachers to use the

BASIC DIFFERENCES

CBI vs PBTE

	CBI	PBTE
TARGET GROUPS	SECONDARY AND POST-SECONDARY VOCATIONAL STUDENTS	PRESERVICE AND IN-SERVICE TEACHERS
CONTENT FOCUS	TECHNICAL OCCUPATIONAL SKILLS AND KNOWLEDGE	PROFESSIONAL OR PEDAGOGICAL SKILLS AND KNOWLEDGE

Figure 1. Basic Differences BetweenCBI and PBTE

competency-based approach in their classrooms, you should organize your teacher training programs so they themselves may experience competency-based instruction. In fact, the teacher training program should be a model on which teachers can base their own adult education programs. As in the old maxim, you should practice what you preach.

For inservice teachers preparing themselves for effective teaching in competency-based programs, PBTE is particularly appropriate. Traditional college courses are often not very convenient, or relevant, or helpful to the practicing teacher. In an individualized performance-based program, teachers can select those competencies they wish to achieve, and work on them at their own pace, using their own learning style. When they feel that they have achieved proficiency, they can demonstrate their competence in their own school classroom.

The Center's PBTE Modules

PBTE programs, to function well, do require instructional materials that are individualized, basically self-contained, and thoroughly developed and tested. The Center now has PBTE modules that meet these requirements, and they are rapidly becoming available to the profession. There are 100 modules, organized into ten categories. A listing of the categories and individual module titles appears at the end of this section.

Publication of the PBTE modules is the culmination of ten years of exhaustive research and development. There have been three major phases in this work.

The research phase covered the years 1967-1972. The major outcome was the identification and verification of 384 competencies important to successful vocational teaching (professional pedagogical competencies). In this research effort, over 1100 persons from all service areas and from secondary and post-secondary schools were involved.

In the curricula development and testing phase (1971-77) the 100 instructional modules were developed in several stages. Prototype modules were written and given preliminary testing. The modules were then subject to major revision and advanced testing at 18 teacher education institutions involving over 8000 pre and inservice teachers. The feedback from students and from resource persons was highly positive. Based on data from advanced testing, all 100 modules were subject to further refinement and prepared for publication.

The present phase is that of dissemination. The teacher education modules are being published by the American Association for Vocational Instructional Materials (AAVIM) at the University of Georgia. Program support materials are also being produced.

Twenty-five institutions are now involved in the implementation of PBTE using The Center's materials, with state and regional workshops being held to train teacher educators to utilize the PBTE approach. We are pleased to report that response to The Center's modules has been

overwhelmingly favorable. They have been acclaimed as filling a crucial need in vocational teacher education.

Each module covers one or more of the 384 competencies identified as being important in vocational teaching. The modules are basically self-contained, and to a great extent self-instructional. However, the teacher educator, serving as a resource person, is an integral and essential element in the instructional program. Every module embodies what we believe to be the best principles and practices of competency-based education.

The modules' instructional sequence is presented here:

- After the statement of the terminal objective, the first section is devoted to the cognitive knowledge on which the competency is based. (In the module on Oral Questioning, for example, there is information on the importance of oral questioning, techniques of questioning, types of questions, and when to apply the techniques).

- Planning activities and experiences are provided.

- Alternate activities are suggested for situations in which the standard learning activities are not feasible.

- Optional activities provide opportunities for those who want to learn more about the teaching competency, or for those who have special interests.

- In the final experience the teacher is required to demonstrate competency by performing the subject competencies in an actual school situation, with real students. A specially prepared assessment form is used by the resource person to rate the teacher's performance.

See Figure 2 for a graphic representation of this instructional sequence.

Designing an Inservice Professional Development Program Using PBTE

A few important points need to be made for your consideration as you review the PBTE materials:

1. The PBTE modules are designed to be appropriate for inservice as well as preservice teachers, and for teachers working in secondary, post-secondary, or adult education programs. They are appropriate for the professional training of instructors in all occupational areas.

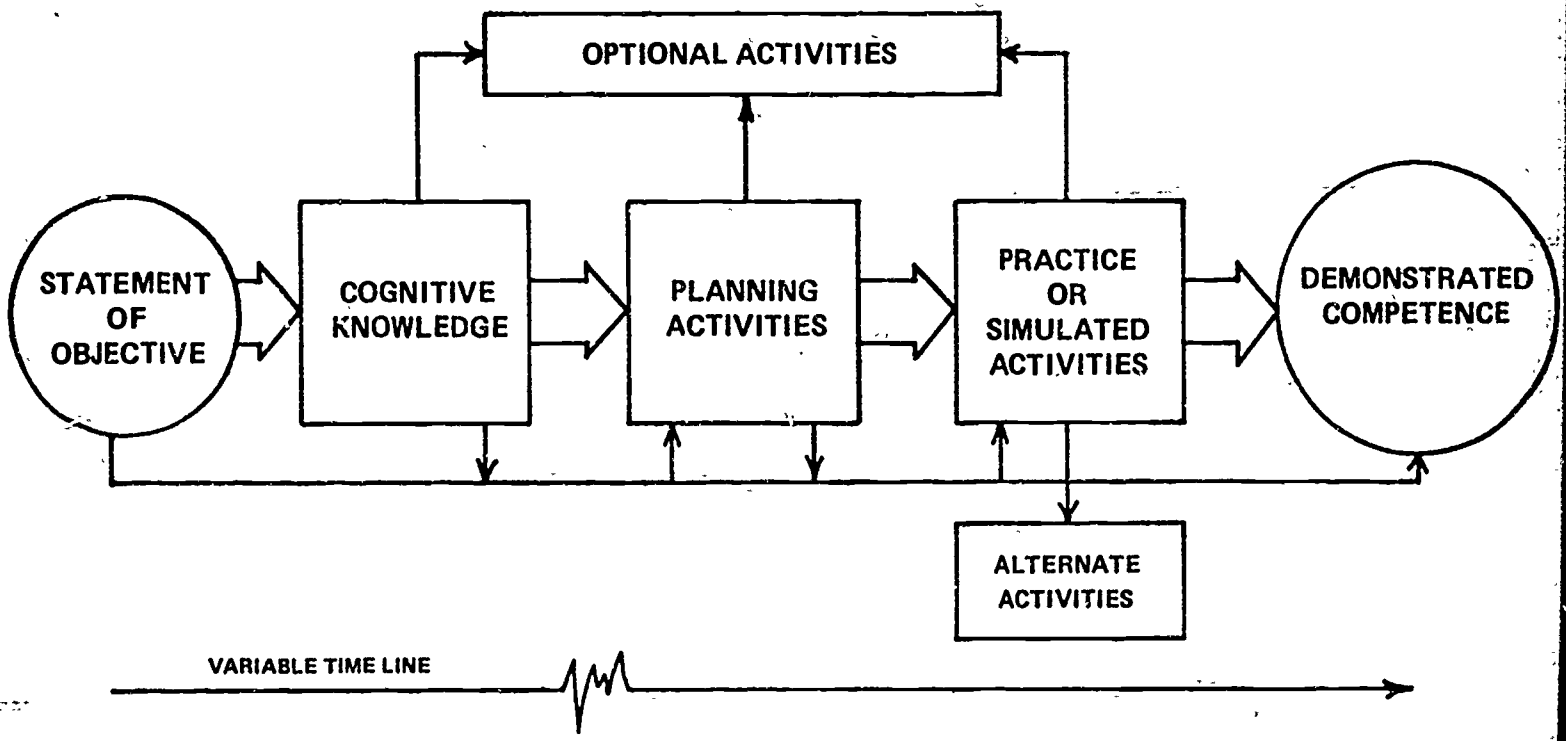

Figure 2. TYPICAL INSTRUCTIONAL SEQUENCE FOR CVE MODULES

2. No one teacher would be expected to complete all 100 modules, or to achieve proficiency in all 384 competencies. These competencies might represent the work of a professional lifetime for a teacher. Typically, the inservice teacher selects to work on competencies for which he/she has special need or interest.

3. While the modules are individualized, they are not meant to stand alone, or serve as a kind of correspondence course. They are designed to form an integral part of a total performance-based teacher education program. Their use requires the participation of qualified teacher educators.

4. The implementation of PBTE requires that faculty and support personnel be trained for their new roles in the program. We are strongly convinced that you cannot select a series of modules, hand them out to teachers to read, and expect any success. To assist institutions and agencies develop effective PBTE programs, we at The Center have developed special training programs and support materials.

In summary, it seems to be highly logical to utilize performance-based teacher education to prepare teachers for competency-based adult vocational instruction in the schools. PBTE is especially appropriate for inservice professional development programs, but for this purpose thoroughly developed individualized instructional materials are needed. The Center's PBTE modules are indeed well-developed, flexible, and versatile materials around which teacher education programs can be built. They are now becoming available to the profession. If used to their fullest potential, they can make a significant contribution to the development of teachers who will produce sound and successful competency-based adult education programs.

Note: An order and availability form for PBTE appears on the following pages.

PBTE MODULES
Order and availability form

To Use This Form: Select the modules you desire from the listing on pages 1, 2 and 3. After you have selected all modules desired, record totals at the space provided on page 4 and compute a "Total Amount Due."

Please note the **"Date Available For Sale"** column. You may order (and pay for) modules before they are published and they will be shipped as soon as they become available.

When you complete the form, fold so that the return address panel is on the outside, staple and mail—no postage necessary.

Your purchase order may be substituted for this order blank.

Published by:

AA VIM
AMERICAN ASSOCIATION FOR VOCATIONAL INSTRUCTIONAL MATERIALS
Engineering Center—Univ. of Georgia
Athens, Georgia 30602
404 542-2586

Developed by:

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University 1960 Kenny Road Columbus Ohio 43210
614 486-3655

These materials were developed and tested pursuant to contracts with the National Institute of Education and the U. S. Office of Education.

Listings

Module Number	Name of Module	Date Available For Sale	Price Each	Quantity Desired	TOTAL COST
SUPPORTING MATERIALS					
	Vocational Teacher Competency Profile-Pad of 50 Individualized Record Sheets	Now Available	2.00		
	Student Guide to Using Performance-Based Teacher Education Materials	9-15-77	$ .70		$
	Resource Person Guide to Using Performance-Based Teacher Education Materials	9-15-77	4.80		
	Guide to the Implementation of Performance-Based Teacher Education	9-15-77	4.80		
	Performance-Based Teacher Education: The State of the Art, General Education and Vocational Education	12-30-77	4.00		
CATEGORY A: PROGRAM PLANNING, DEVELOPMENT, AND EVALUATION					
A-1	Prepare for a Community Survey	12-9-77	4.00		
A-2	Conduct a Community Survey	12-9-77	2.50		
A-3	Report the Findings of a Community Survey	12-9-77	3.50		
A-4	Organize an Occupational Advisory Committee	12-9-77	2.20		
A-5	Maintain an Occupational Advisory Committee	12-9-77	2.70		
A-6	Develop Program Goals & Objectives	12-9-77	2.10		
A-7	Conduct an Occupational Analysis	12-9-77	4.80		
A-8	Develop a Course of Study	12-9-77	3.00		
A-9	Develop Long-Range Program Plans	12-9-77	2.10		
A-10	Conduct a Student Follow-up Study	12-9-77	3.50		
A-11	Evaluate Your Vocational Program	12-9-77	3.70		
CATEGORY B: INSTRUCTIONAL PLANNING					
B-1	Determine Needs & Interests of Students	Now Available	3.50		
B-2	Write Student Performance Objectives	Now Available	3.50		
B-3	Develop a Unit of Instruction	Now Available	3.00		
B-4	Develop a Lesson Plan	Now Available	2.00		
B-5	Select Student Instructional Materials	Now Available	2.00		
B-6	Prepare Teacher-Made Instructional Materials	Now Available	2.00		

1

Module Number	Name of Module	Date Available for Sale	Price Each	Quantity Desired	TOTAL COST
CATEGORY C: INSTRUCTIONAL EXECUTION					
C-1	Direct Field Trips	Now Available	2.90		
C-2	Conduct Group Discussions, Panel Discussions, & Symposiums	Now Available	2.50		
C-3	Employ Brainstorming, Buzz Group & Question Box Techniques	Now Available	1.50		
C-4	Direct Students in Instructing Other Students	Now Available	1.50		
C-5	Employ Simulation Techniques	Now Available	2.90		
C-6	Guide Student Study	Now Available	3.30		
C-7	Direct Student Laboratory Experience	Now Available	3.40		
C-8	Direct Students in Applying Problem-Solving Techniques	Now Available	2.70		
C-9	Employ the Project Method	Now Available	1.80		
C-10	Introduce a Lesson	Now Available	2.00		
C-11	Summarize a Lesson	Now Available	1.50		
C-12	Employ Oral Questioning Techniques	Now Available	2.10		
C-13	Employ Reinforcement Techniques	Now Available	3.10		
C-14	Provide Instruction for Slower & More Capable Learners	Now Available	1.80		
C-15	Present an Illustrated Talk	Now Available	2.40		
C-16	Demonstrate a Manipulative Skill	Now Available	2.40		
C-17	Demonstrate a Concept or Principle	Now Available	2.30		
C-18	Individualize Instruction	Now Available	3.00		
C-19	Employ the Team Teaching Approach	Now Available	1.50		
C-20	Use Subject Matter Experts to Present Information	Now Available	2.40		
C-21	Prepare Bulletin Boards & Exhibits	Now Available	2.50		
C-22	Present Information with Models, Real Objects & Flannel Boards	Now Available	2.20		
C-23	Present Information with Overhead & Opaque Materials	Now Available	2.80		
C-24	Present Information with Filmstrips & Slides	Now Available	2.80		
C-25	Present Information with Films	Now Available	2.20		
C-26	Present Information with Audio Recordings	Now Available	2.90		
C-27	Present Information with Televised & Videotaped Materials	Now Available	2.30		
C-28	Employ Programmed Instruction	Now Available	4.20		
C-29	Present Information with the Chalkboard & Flip Chart	Now Available	3.00		
CATEGORY D: INSTRUCTIONAL EVALUATION					
D-1	Establish Student Performance Criteria	8-30-77	1.30		
D-2	Assess Student Performance: Knowledge	8-30-77	3.20		
D-3	Assess Student Performance: Attitudes	8-30-77	2.40		
D-4	Assess Student Performance: Skills	8-30-77	1.80		
D-5	Determine Student Grades	8-30-77	2.00		
D-6	Evaluate Your Instructional Effectiveness	8-30-77	1.50		
CATEGORY E: INSTRUCTIONAL MANAGEMENT					
E-1	Project Instructional Resource Needs	10-28-77	1.70		
E-2	Manage Your Budgeting & Reporting Responsibilities	10-28-77	2.00		
E-3	Arrange for Improvement of Your Vocational Facilities	10-28-77	2.00		
E-4	Maintain a Filing System	10-28-77	2.40		
E-5	Provide for Student Safety	10-28-77	2.80		
E-6	Provide for the First Aid Needs of Students	10-28-77	1.70		
	Assist Students in Developing Self-Discipline	10-28-77	2.00		
E-8	Organize the Vocational Laboratory	10-28-77	2.70		
E-9	Manage the Vocational Laboratory	10-28-77	3.80		

2

Module Number	Name of Module	Date Available for Sale	Price Each	Quantity Desired	TOTAL COST
CATEGORY F: GUIDANCE					
F-1	Gather Student Data Using Formal Data Collection Techniques	9-30-77	2.70		
F-2	Gather Student Data Through Personal Contacts	9-30-77	2.00		
F-3	Use Conferences to Help Meet Student Needs	9-30-77	2.40		
F-4	Provide Information on Educational & Career Opportunities	9-30-77	2.20		
F-5	Assist Students in Applying for Employment or Further Education	9-30-77	2.60		
CATEGORY G: SCHOOL-COMMUNITY RELATIONS					
G-1	Develop a School-Community Relations Plan for Your Vocational Program	3-03-78	1.50		
G-2	Give Presentations to Promote Your Vocational Program	3-03-78	2.00		
G-3	Develop Brochures to Promote Your Vocational Program	3-03-78	2.50		
G-4	Prepare Displays to Promote Your Vocational Program	3-03-78	2.40		
G-5	Prepare News Releases & Articles Concerning Your Vocational Program	3-03-78	2.40		
G-6	Arrange for Television & Radio Presentations Concerning Your Vocational Program	3-03-78	2.50		
G-7	Conduct an Open House	3-03-78	1.50		
G-8	Work with Members of the Community	3-03-78	2.30		
G-9	Work with State and Local Educators	3-03-78	1.50		
G-10	Obtain Feedback About Your Vocational Program	3-03-78	1.70		
CATEGORY H: STUDENT VOCATIONAL ORGANIZATION					
H-1	Develop a Personal Philosophy Concerning Student Vocational Organizations	9-16-77	1.30		
H-2	Establish a Student Vocational Organization	9-16-77	1.80		
H-3	Prepare Student Vocational Organization Members for Leadership Roles	9-16-77	1.70		
H-4	Assist Students in Developing and Financing a Yearly Program of Activities	9-16-77	1.80		
H-5	Supervise Activities of the Student Vocational Organization	9-16-77	1.80		
H-6	Guide Participation in Student Vocational Organization Contests	9-16-77	1.60		
CATEGORY I: PROFESSIONAL ROLE AND DEVELOPMENT					
I-1	Keep Up-to-Date Professionally	2-17-78	3.10		
I-2	Serve Your Teaching Profession	2-17-78	2.10		
I-3	Develop an Active Personal Philosophy of Education	2-17-78	3.10		
I-4	Serve the School & Community	2-17-78	1.30		
I-5	Obtain a Suitable Teaching Position	2-17-78	2.50		
I-6	Provide Laboratory Experiences for Prospective Teachers	2-17-78	2.30		
I-7	Plan the Student Teaching Experience	2-17-78	2.30		
I-8	Supervise Student Teachers	2-17-78	2.50		
CATEGORY J: COORDINATION OF COOPERATIVE EDUCATION					
J-1	Establish Guidelines for Your Cooperative Vocational Program	1-20-78	2.40		
J-2	Manage the Attendance, Transfers, & Terminations of Co-Op Students	1-20-78	1.30		
J-3	Enroll Students in Your Co-Op Program	1-20-78	3.90		
J-4	Secure Training Stations for Your Co-Op Program	1-20-78	1.40		
J-5	Place Co-Op Students On the Job	1-20-78	4.00		
J-6	Develop the Training Ability of On-the-Job Instructors	1-20-78	1.70		
J-7	Coordinate On-the-Job Instruction	1-20-78	3.30		
J-8	Evaluate Co-Op Students' On-the-Job Performance	1-20-78	1.90		
J-9	Prepare for Students Related Instruction	1-20-78	1.90		
J-10	Supervise an Employer-Employee Appreciation Event	1-20-78	2.00		

3

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ADULT EDUCATION PROGRAMS AND ERIC

Bernie Moore
Research Specialist, CVE*

Adult Education Programs

There are two things I'd like to talk about very briefly. One is the Adult Cooperative Education project that we worked on here at The Center for Vocational Education for 18 months (July 1, 1974-December 31, 1975). It's completed and there are five products available from this project.

The project was funded by the U. S. Office of Education (USOE) and monitored by the Bureau of Occupational and Adult Education (BOAE). We did a national survey of programs that were jointly sponsored between business or industry and education. We located over 100 programs in operation between September-December, 1974. We visited a number of these, two of which I will describe to you briefly. One was conducted by the Public Community Schools of Grand Rapids, Michigan, where they worked with over 2,000 adults in 50 different locations throughout Grand Rapids. Program staff included a full-time director and a number of part-time teachers that worked with the individuals in the different plants. Community School staff provided the instruction on-site. We visited the program at Fisher Body Plant No. 2. They had their instructional facility in the lunchroom just above one of those big presses that stamps out car bodies, causing the whole room to shake. Yet, staff-assisted students (employees) worked toward their goal of obtaining a high school diploma. Most were successful in this activity.

We visited another project in Plymouth, North Carolina, conducted by Weyerhaeuser Corporation and Martin Technical Institute. Students were full-time employees who were able to get off work an hour early to go to the learning center, where they had individualized activities such as reading, problem solving or writing.

Five products were produced by the project. One is a listing of the over 100 programs. The second contains abstracts of 29 of these programs. The third reports case studies of the five programs we visited. The two documents you might be most interested in would be the guidelines and discussion documents. The guidelines were used to identify programs and we tested them on-site when we interviewed project staff and students. We revised those after the project was over. The discussion report resulted from project activities and problems which people described in designing and operating cooperative programs. Approximately 15 items are identified and briefly discussed in this

*On September 1, 1977, Dr. Moore assumed the position of Assistant Professor, Department of Adult Education and Institute for Community and Area Development, 422 Tucker Hall, University of Georgia, Athens.

report. For example, you really shouldn't offer a cooperative program for adults without involving the labor union and their designated representatives; otherwise, such programs just won't work in an organized industry. Another example involves the types of agreements between agencies. Agreements help to clarify who is responsible for conducting parts of the cooperative program.

Educational Resources Information Centers (ERIC)

The second part of my discussion with you is to describe the ERIC system. I would like to point out several things in your packet of materials. If you're interested in getting on the mailing list for information, publications, and so on, fill out the card on the red brochure and you can leave it with Earl or send it to me. We will put you on the mailing list and keep you informed of publications and activities of the ERIC Clearinghouse on Career Education (ERIC/CE).

This particular Clearinghouse (ERIC/CE) has three areas of emphasis. It's called Career Education, and that's one area of emphasis; another is Adult and Manpower; and the third area is Vocational and Technical Education.

Everything you probably need to know about ERIC is in this brochure, "ERIC--What It Can Do For You/How To Use It." I will emphasize three particular functions that we do. If you're interested in a computer search of the literature, here is this brochure. You can fill in the information card and send it back to us here or use the brochure as a guide when you contact a search service in your state. Also in the packet are brief bibliographies called CLIPS; please be sure you look over the ones on preparing and submitting documents to ERIC. We would like you to keep these suggestions in mind when you prepare documents. Once you have documents and reports from your various activities, if you would send two copies of these to the ERIC Clearinghouse here, we would appreciate receiving them and could possibly include them in the ERIC system.

As I stated before, this particular Clearinghouse on Career Education does three major things: (1) We acquire, process, and make documents available via Resources in Education (RIE) and the Current Index to Journals in Education (CIJE). (2) We offer user services. If you have a question or are looking for a document to mention a couple of examples, write us and we'd be glad to try to hunt them down for you and give you all the information about them that we can find. (3) Information analysis--we commission authors to use materials in the ERIC system to write a report on a current issue or topic of interest. We have 23 of these reports underway this year, one of which is being prepared by John Peterson (another person on your program) on metrics.

METRIC EDUCATION INSTRUCTIONAL MATERIALS FOR VOCATIONAL, TECHNICAL, AND ADULT EDUCATION

John C. Peterson
Research Specialist, CVE

The Metric Education Project was a three-year project funded by the Bureau of Occupational and Adult Education of USOE. It concluded June 30, 1977. Products were developed in five general phases. First, a bibliography of materials for vocational-technical and adult education was developed and published in 1975. Second, a position paper was written on what the effects of converting to the metric system would be on adult basic education and vocation-technical education. This paper was published immediately following the bibliography. The third and fourth phases comprised the two major components of the project; development of metric materials for use in adult basic education (ABE) and vocational-technical education. The fifth phase consisted of developing an implementation guide for use with these materials. A workshop was conducted in each of the ten USOE regions. At these workshops, in the Spring of 1977, the materials developed in ABE and in vocational-technical education were demonstrated.

Adult Basic Education Materials

The adult basic education materials were developed at three different levels. The first level is aimed at students whose reading and mathematical ability are approximately grades 1-3; the second level, grades 4-6; and the third level, grades 7-9.

Level I (grades 1-3) consists of three books: a student workbook, an instructor's guide, and an audio tape script. In addition, there is a series of three tapes. The instructor's guide in Level I is divided into six sections--four learning and two review--(e.g., Section A is devoted to measuring length). Student objectives were established for each learning section. Students listen to the tapes as they progress through the workbook, and in Level I, upon completion of the book, they should be able to meet four main objectives. (Tapes can be individualized if the teachers have enough cassettes so that each student can use a tape and replay it if necessary.) After completing each tape, the activities outlined in the instructor's guide are used in directing the student through some "hands-on" learning experiences (e.g., students measure various items with a metre stick).

The tape scripts are printed for the instructors, giving them the option of reading them to the students. Related to this point, while the materials were being field-tested in Ohio, South Carolina, and Florida, a teacher complained that a tape was too slow; students were bored to death. So she quit using it and read the material from the script. At this point consideration was given to re-recording the tapes. However, a second teacher responded that the tape was too

fast; his students were not able to keep up. Then, a third teacher said the speed was just right! No more thought was given to re-recording!

The student workbook concludes with several review pages. The instructor's guide contains a script for a student post-test designed to measure how well the students met the objectives. The posttest script is not on a tape as it is more advantageous for the instructor to read the questions to the students and be able to observe when they are ready to advance to the next question. The last page in the instructor's guide gives the answers to the posttest questions.

Level II and Level III are for grade levels 4-6 and 7-9, respectively. These were to be read by the students. The instructor's guide has a list of the objectives. For example, students should be able to use a unit and its symbol, to read correctly the particular instruments, and to measure.

The lessons in Levels II and III contain a brief discussion of a particular unit followed by some activities, and then often followed by a short description of how people would use that unit in their occupation.

In each of the books we had a series of recipes adapted, with permission, from Betty Crocker. These were taken from a book designed for early teens. We went through and selected four recipes that did not require any cooking, at least in the classroom, and no refrigeration.

In addition, there are places in Levels II and III where there are paper-pencil exercises. The answers are in the back of the student workbook.

In the instructor's guide we included a slightly different test. For example, one of our objectives was that the student would be able to measure. For the test, students had to measure objects on a resource table. We tried to get the tests away from being strictly of the pencil-paper type.

Vocational-Technical Materials

One other aspect of the project was a set of metric materials for 77 different occupations. These were field tested in eight states, brought back, revised/combined, and introductory general metric activities were inserted.

There are 55 final packages. There are five units in each: 1) introduction, 2) introduction to the metric measurements that would be used in that particular occupation, 3) how to change from one unit to another unit within the metric system, 4) any particular metric tools or devices relevant to a particular occupation, and 5) how to convert

from the metric system to the standard system.

The project ended June 30. We distributed 1,000 complete sets of the 55 vocational packages throughout the United States. We conducted workshops in each of the 10 USOE regions. In addition, each state director of vocational education got 13 complete sets or more. Each territory got a complete set. These are not copyrighted and those state directors are welcome to reproduce them if they want to. In addition, each state director of adult education got a complete set of the adult basic education materials, including the tapes. Again, they are free to reproduce these materials.

All these materials are published here at The Center. There are discounts for bulk orders.

If you would like further pricing and ordering information, write to CVE Publications here at The Center for Vocational Education.

Chapter V

Individual Action Plans

As was explained in Chapter I, Workshop participants were encouraged to develop an Individual Action Plan as a part of the scheduled Workshop activities. The form originally given to participants is shown on the following page.

This Chapter contains Individual Action Plans developed by the following participants:

Dale E. Brooks, Kansas
Bobby J. Brown, Oklahoma
Merle Charles, Virgin Islands
Dixie G. Gillies, Virgin Islands
Herbert A. E. Grigg, Virgin Islands
Carla Kay Hoke, Ohio
Florence F. Hood, Virginia
Robert D. Jacoby, New Jersey
Robert LaRocque, West Virginia
Etta S. McCulloch, Florida
Clair I. Marshall, Virgin Islands
James E. Musick, Washington, D.C.
Alvin Nowlin, Oklahoma
Melanie J. Parks, Florida
Alaine G. Powell, Virgin Islands
Johnny H. Spears, Alabama
Lena A. Shulterbrandt, Virgin Islands
Bryan Shuster, Missouri
Robert D. Steely, Michigan
Frank P. Sroka, Connecticut

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job. (Use separate sheet(s) if necessary.)

2. Specify the situations or problems (priorities you listed in the Tuesday small group session?) to which each of the above may be applied in your job. (Use separate sheet(s) if necessary.)

3. List the ACTIONS you can take to apply what you learned to the situation, problems, or priorities above. (Use separate sheet(s) if necessary.)

4. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

I hereby grant The Center for Vocational Education permission to select my Individual Action Plan for publication in the Workshop Proceedings:

NAME _____
(signature)

NAME _____
(printed)

PHONE _____
(area code) (number)

DATE _____

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Dale E. Brooks, Area Director
Central Kansas Area Vocational-Technical School
P. O. Box 545
Newton, KS 67114

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   Detailed concepts of CBVE.

2. Specify the situations or problems to which each of the above may be applied in your job.

   - Will organize 12 vocational programs around CBVE.
   - Will report conference activities to Kansas State Dept. of Education.
   - Will report conference activities to Kansas Task Force on CB Education.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Dates
. Organize CBVE instruction in 12 programs.	January 12, 1978
. Initiate a CBVE project in Kansas as recommended to the Director of Vocational Education.	June 1, 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Bobby J. Brown, Teacher Educator
Dept. of Vocational Teacher Education
N.E. #201
Central State University
Edmond, OK 73034

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Development of some ideas for:

      1) A format for curriculum development

      2) Refining current plan for in-service vocational adult staff development

      3) Competency-based teacher education program for adult vocational educators.

   B. Development or reinforcement of some insights related to:

      1) Feasibility of a complex learning system.

      2) The critical problem areas appear to be fairly common

      3) Pre-vocational programs can help in closing the gap between basic education and vocational education

      4) Staff development is critical in the development and maintenance of a CBE program.

   C. Some concepts that appear to have an impact on CBE:

      1) Learning style mapping

      2) "Functional competencies" for survival skills.

   D. Some specific techniques that could be helpful:

      1) The planning models presented by various workshop contributors

2) Individual contact with participants helps to clarify some questions on various techniques utilized in planning for CBE programs.

2. Specify the situations or problems to which each of the above may be applied in your job.

Based on some ideas generated at this workshop, I can upgrade the adult staff development and technical assistance program at Central State University in Oklahoma. Some of the specific areas are:

A. Pre- and in-service teacher education program for adult vocational educators.

B. Curriculum materials development.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Dates
Incorporate selected information learned at this workshop into current staff development and technical assistance program for adult vocational educators. Specific areas of competency-based instruction and open entry/open exit programs.	January 15, 1978
Plan and conduct a minimum of one workshop to disseminate information obtained at this workshop.	April 1, 1978
Plan a preliminary strategy for developing the competencies needed by instructors in adult vocational competency-based programs.	January 15, 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Merle Charles, State Supervisor
Business & Distributive Education
State Dept. of Education
P. O. Box 7224
St. Thomas, VI 00801

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. What competency-based education is.
   B. Factors from other movements that contributed to the genesis of CBE movement.
   C. Advantages of CBE versus the traditional approach to instruction.
   D. Names of institutions with exemplary programs in CBAVE and contact persons at those institutions.
   E. How institutions with exemplary programs got started, how those originally utilizing the traditional approach to instruction moved to CBAVE, how staff development is done, and how curriculum materials are developed.
   F. Names of institutions of higher education with competency-based teacher education programs that may possibly have resource persons who could be utilized on a contractual basis to provide orientation and staff development for incumbents.
   G. Where incumbents may matriculate to acquire additional knowledge and expertise in CBE.
   H. Sources of CBE materials that may be adapted to our use.
   I. Components of a competency-based curriculum and features that make a curriculum competency-based.

2. Specify the situations or problems to which each of the above may be applied in your job.

   The knowledges, concepts, and ideas acquired were good when one considers what I've been able to add to my fund of knowledge on the subject.

3. List the ACTIONS you can take to apply what you learned to the situation or problems cited. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

In initiating staff development which will include:

A. Orientation and overview on CBE
B. On-site visits for observation
C. Dissemination of materials from the National Workshop
D. Utilization of resource people to afford in-depth knowledge
E. Matriculation for further study and acquisition of competencies to enhance the instructional process.

Because decisions involving changes in the instructional process must be made in conjunction with other school administrative and supervisory personnel, and because such decisions are contingent on several factors, it is impossible to estimate when the above will be implemented. Suffice it to say that the proceedings of this conference will be shared with classroom teachers, administrative and supervisory personnel in the State Dept. of Education. Subsequent action can only be taken in response to their mandate.

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Dixie G. Gillies, State Supervisor
Home Economics Education
Department of Education
P. O. Box 8316
St. Thomas, Virgin Islands 00801

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Meaning of CBE
   B. Steps in implementation
   C. Method for developing materials
   D. Funding possibilities
   E. Open entry/open exit concept

2. Specify the situations or problems to which each of the above may be applied in your job.

   A. Teacher acceptance
   B. Administrative acceptance
   C. Securing materials
   D. Developing and updating materials
   E. Relating materials to local situation

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Date
A. Introduce concepts of CBE to 26 teachers	1977
B. Work on task analysis of home economics jobs	1977
C. Plan in-service program for teachers in CBE	1978
D. Develop method of pre-testing prospective students	1977-78
E. Orient teachers to change to new concepts	1977-78

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Herbert A. E. Grigg
Instructor/Department Chairman
Department of Education
P. O. Box 96
Christiansted, St. Croix
Virgin Islands 00820

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

The concept of CBE gives great flexibility to the student because it allows him to get the competencies he needs to fit into the world of work.

Open entry/open exit is ideal for adults.

2. Specify the situations or problems to which each of the above may be applied in your job.

This type of instruction (CBE) will bring into action a meaningful curriculum for industry and school. Also, there will be more accountability of students.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Date
Revision of curriculum towards setting up a listing of valid competencies.	6/15/78
Improve present Individual Action Plan	6/15/78

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Carla Kay Hoke
Developmental Center Coordinator
Polaris Vocational Center
7285 Old Oak Boulevard
Middleburg Heights, Ohio 44130
(216) 243-8600

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Definition of Competency-Based Instruction: Based upon a job/task analysis and consisting of elements such as performance objectives, individualized instruction, and criterion-referenced testing."

   B. Examples of competency listings related to specific trade, business, and health, areas (V-TECS, Dr. Knaak, etc.)

   C. How to locate, develop, and adapt curriculum materials

   D. How to organize teacher inservice.

   E. How to orient students to CBE.

   F. How to manage a CB system.

   G. Where to find exemplary CB programs both at secondary and adult levels.

2. Specify the situations or problems to which each of the above may be applied in your job.

In my role, I am involved with teacher in-service and helping instructors individualize their programs based on the reading/math skills possessed by (or lacking in) their students. We are a new school and our instructors are currently involved in preparing courses of study. Each item above directly relates to this process.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

	Actions	Date
A.	Organize and synthesize materials from this workshop in a form which can be presented to others	8/12/77
B.	Present a report from this workshop to the superintendent and to both the adult director and secondary director of vocational education	8/19/77
C.	Collect, review, and organize competency-based materials from available sources	9/30/77

T & I Curriculum Materials Laboratory, Ohio State University, Columbus, Ohio 43210

Center for Vocational Education, 1960 Kenny Road, Columbus, Ohio 43210

American Association for Vocational Instructional Materials, Athens, Georgia 30602

Dr. William Knaak, 916 Area Vocational-Technical Institute, 3300 Century Avenue, White Bear Lake, Minnesota 55110

Joe Cooney, ACE Project,
San Mateo County Office of
Education, 609 Price Avenue,
Redwood City, California 94063

Auburn University, Auburn, Alabama

D. Request permission to visit exemplary programs — 8/19/77

Capitol Area Career Center,
Mason, Michigan

916 Area Vo-Tech Institute,
White Bear Lake, Minnesota

E. Conduct visitations to exemplary programs — 12/25/77

F. Locally determine feasibility of implementing a CB program — 1/31/78

All items D-F on this plan of action are dependent upon the administrative reaction to items B and C. If reaction to all items on this plan of action are favorably received, a local committee will be formed to determine implementation procedures.

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Florence F. Hood, Associate Professor
Norfolk State College
2401 Corprew Avenue
Norfolk, VA 23504

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Extended definitions of CBI

   B. Copies of significant articles relating to CBI with a comprehensive reference list

   C. Organization and management techniques (conduct, implementation) of a National Workshop as a component of a federally-funded project

   D. Current perspective on CBI in adult vocational education with regard to national trends and federal legislation; an underlying philosophy that adults can, want to, and must learn.
      1. Lowering birth rate, expanding life expectancy rate
      2. Greater utilization and development of human resources including existing experiences, skills, and wisdom of the aging
      3. Greater accountability in the use of funds for an expanding and diverse population in a society with increasing complexities of survival
      4. An expanding economy and the increasing need for retraining and updating existing skills
      5. Lifelong career planning and adjustment
      6. Self-actualization and the use of leisure.

   E. A comparative dearth of functionally efficient CBI programs for adults in the United States as reported in the national study.

   F. Scope of projects funded by USOE which relate directly or indirectly to CBAVI from 1974 to 1977

   G. Sources of information for RFP's - process of proposal selection in USOE

H. Explanation of and introduction to a wide variety of exemplary CBAVI programs currently operating throughout the nation:
   1. Instructor Initiated and Operated - California
   2. A Large Comprehensive Program - Minnesota
   3. Inter-Agency Roles and Functions - Alabama
   4. Adult Competency Education Project - California
   5. The Adult Performance Level Approach in Adult Vocational Education (APL) - Texas, California, Alabama
   6. Administration, Development, and Operation - Minnesota
   7. Competency Based Instruction for the Disadvantaged Adult - Florida

I. Introduction to The Center for Vocational Education: people, resources, projects, plans for the future; how to secure professional assistance and resources; organization and management; roles of individual personnel.

J. Exemplary programs appeared to review and reinforce the need for individualized instruction. Management systems, curriculum development (modules, LAPs), and evaluation techniques were among the many aspects discussed.

K. Competency-Based Diplomas

L. Life Coping Skills - APL

2. Specify the situations or problems to which each of the above may be applied in your job.

A. Administration -
   1. Provide input for course content so that individual needs of students and programs might be more effective.
   2. Provide funds for teacher educators to secure much needed resources for special needs students and other areas.
   3. Update job descriptions for teacher educators while recognizing growing demands on time, resources; compensate accordingly with salary, released time for skills updating and occupational experiences, and exchange teaching with other institutions in this and other states.

Comment: Administrators in the State Department, local schools, colleges and universities, and business and industry might work cooperatively as was done at this workshop and in V-TECS in identifying competencies needed in developing further competencies. Released time, stipends, exchange teaching, funding for projects and supplies, and the opportunity to visit exemplary programs might be some of the motivating factors or techniques to encourage teachers and teacher educators to become more actively involved in the implementation of CBI.

B. Articulation -

1. Implement efficient and effective cooperative planning.
2. Coordinate joint efforts.
3. Elimination of redundant and overlapping efforts to institutions and in various service areas.
4. Provide workshops for team teaching, teaching, program development.

Comment: State Department personnel, teacher educators, and local school personnel need to promote more effective articulation between institutions and vocational education services; between cooperating teachers, institutions and guidance counselors; and between and among institutions in content of course offerings.

Since V-TECS materials are not a curriculum but statements of performance objectives, criterion-referenced measures, and performance guides for tasks, additional work will be needed by teachers to implement them with the intended audiences. Further work in curriculum development (especially for the exceptional child in the regular classroom), lesson planning, preparation of teaching materials, etc. appear to be needed. These efforts might well be joint efforts in some cases, with several or all service areas on common aspects of teaching, e.g. constructing tests, grading. Additionally, the PBTE Modules developed by The Center for Vocational Education hold great potential for relevant instruction with a multitude of audiences: preservice, inservice teachers; local directors of vocational education; teacher educators; and administrators. Joint efforts could have a synergistic effect of being more expedient and more economical as well as to eliminate redundant efforts.

C. Communication -

1. Improve human relations communications-inter- and intra-institution.
2. Promote an open two-way flow of communication through several techniques: newsletters, sharing copies of memos, telephone access.
3. Develop and implement better team work between the Division of Vocational Education in the State Department and individuals in the various institutions.
4. Provide for different kinds of annual conferences, maybe on alternate years, with all areas coming together.

Comment: During the past decades much emphasis has been placed on the cognitive domain, all too frequently at the exclusion of the affective domain. Barriers still appear to exist, whether real or imagined, between levels of personnel. Current emphases on humanizing interactions on all levels appear to verify this observation. Often it is the lack of information which causes misunderstandings rather than inadequacies of individuals in the communication process. Thus, a two-way-flow of communication is more desirable than the one-way process.

Small group interactions, access to those of credibility, affective exchange and many other techniques open the way for effective communications. The Plethora of printed information shared at this workshop is an example of communication across states and interest areas. The tremendous sharing sessions, formal and informal, served to reinforce and inform participants. There appears to be great opportunity for continuing team efforts in the preservice and inservice activities associated with the implementation of V-TECS materials.

D. Curriculum development - 1. Concentrate on special needs and handicapped students in curriculum development for inclusion in preservice and inservice training.
2. Approach the implementation of CBTE.
3. Update current media and methods in college curriculum and in teaching techniques.

Comment: The exemplary programs presented at this workshop were addressed to individualized instruction and to meeting special needs such as basic skills for employment and personal living. For me, a bonus experience was that of being in the motel with many physically handicapped persons who were attending a National Conference of the Physically Handicapped. A new mandate from the Division of Teacher Certification in Virginia is that of instruction students in the methods class to work with exceptional children in the regular classroom. Therefore, this experience was very valuable.

One of the objectives in the Virginia Vocational Education Five-Year Improvement Plan states that by June 30, 1982, each school division shall have implemented competency-based instructional materials. The 1977-1978 vocational education plan has earmarked $158,000 for inservice and preservice training in competency-based instruction. Thus, an opportunity exists to develop a proposal requesting some of these funds for pre- and inservice training of individuals in this area which is serviced by Norfolk State College. It is perceived that in addition to current V-TECS materials, the PBTE Modules, and other materials shared from other states (as Florida) will prove very beneficial in assisting teachers. Further, should funds be available, it is envisioned that fellow participants in the workshop may be called upon as consultants or presenters in special training programs, especially in special needs curriculum development.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Action	Date
A. Synthesize Workshop proceedings into a personal plan of action.	August 8-10, 1977

Individual Action Plan - Florence F. Hood, continued

	Action	Date
B.	Share Workshop proceedings and experiences with Department Chairperson (H.E.) 1. Relate CBAVI to V-TECS program 2. Seek perceptions for my role in this endeavor 3. Gain approval to proceed with proposal for funding of projects, 1977-78	August 9, 1977
C.	Review recent publications: "Status Report on Implementing Competency-Based Instruction", Division of Vocational Education, Richmond, Va., April 1977, Vol. 2, No. 1.	August 9, 1977
D.	Visit with participants in Annual H.E. Conference which was held simultaneously with CBAVI Workshop. CBI and Adult Education were components of this conference.	August 11-12, 1977
E.	Consult with vocational teacher educators in other service areas at Norfolk State College and Old Dominion University to determine their plans for CBI and V-TECS involvement during the year to make joint plans.	August 15-16, 1977
F.	Contact leadership in State Department of Education: State Director of Voc. Ed.; RCU; State Supervisor of H.E., Adult Ed.; Execu. Dir. of State Advisory Council on Vocational Education to determine potential for personal involvement in the respective areas.	August 18, 1977
G.	Develop proposal for funding for preservice and inservice education.	August 20, 1977
H.	Continue development of curriculum materials with specified competencies. Secure from the Center for Vocational Education as many modules as funds (private) will allow.	August 23, 1977
I.	Implement inservice training program as funding will allow.	September 1977-June 1978
J.	Evaluate efforts and progress	June 1978

Summary and Conclusions

It is acknowledged that the above individual plan of action to implement CBAVI is rather ambitious; that the context of operation has been pre-established with set parameters within which activities will be expected; that the ultimate outcome will be dependent not only upon individual initiative but also upon authority granted commensurate with responsibility. A basic assumption is that opportunity will be provided for group action and teamwork.

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Robert D. Jacoby, Director
Adult Vocational-Technical Education
New Jersey State Department of Education
225 West State Street
Trenton, NJ 08625

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

1.1 Pre-assessment (pre-testing for placement)
1.2 Student accountability
1.3 Teacher accountability
1.4 Standardization of course competencies
1.5 Monitoring of programs
1.6 Accessibility to resources and resource material
1.7 Development of competencies
1.8 Program implementation
1.9 Record keeping
1.10 Transfer of credits to other institutions
1.11 On-the-job training component
1.12 Community involvement
1.13 Business and industry involvement
1.14 Employer support
1.15 Administration (school) support
1.16 Program flexibility (latitude for instructors)
1.17 Instructors in developmental processes
1.18 Selection of courses applicable to CBE

2. Specify the situations or problems to which each of the above may be applied to your job.

2.1.1 Placement in program
2.1.2 Credit for previous work
2.2.1 Monitoring of learning process
2.2.2 Success indicators (identified milestones)
2.3.1 Formal teacher evaluation
2.3.2 Teacher in-service

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2.3.3	Teacher certification
2.4.1	State level course approval
2.4.2	Trade acceptance of identified competencies
2.5	Success indicators (identified milestones)
2.6.1	Use of ERIC
2.6.2	Availability of publications (as one's published at CVE)
2.7.1	Trade advisory committees
2.7.2	General advisory committees
2.7.3	Surveys
2.7.4	Student and Instructor input
2.8.1	State level financial support
2.8.2	Administration and Instructor in-service
2.8.3	Administrative support
2.8.4	Political support
2.9.1	Broad acceptance of CBE concept
2.9.2	Broad representation during formulative stages
2.10.1	Trade and employer support
2.10.2	Active advisory groups
2.10.3	Flexibility of program to respond to changing employer demand
2.10.4	Flexibility of program to respond to changing technology
2.11.1	Community need assessment
2.11.2	Advisory committees
2.12.1	Business and Industry needs assessment
2.12.2	Trade advisory committees
2.12.3	General advisory groups
2.13.1	Additional employer costs
2.13.2	Employer education - advantages of cooperative training programs
2.14.1	Responsibility to serve educational needs
2.14.2	Political advantages
2.15.1	Open entry /open exit philosophy
2.15.2	Effective use of specialized expertise of instructor
2.15.3	Flexibility of program to meet individual abilities of students
2.16.1	The team concept that all responsible parties assist in the developmental process
2.16.2	Better understanding of curriculum
2.16.3	Inclusion of all appropriate expertise
2.17.1	General advisory groups
2.17.2	Trade advisory committees
2.17.3	Use of pilot programs
2.17.4	Monitoring and evaluation of courses

3. List the ACTIONS you can take to apply what you learned in the situation, problems, or priorities above.

3.1.1 Identify successful programs using tested pre-assessment instruments. Develop informational packets and/or inservice workshops to disseminate information to program personnel interested in using the competency based education concept.

3.1.2 Search out competencies required by other educational agencies and compare commonalties with existing programs. Develop linkages with other educational agencies to develop agreements for reciprocity.

3.2.1 Use of a systematic monitoring schedule with a uniformly accepted checklist for record keeping. Make results of process monitoring available to the agency observed.

3.2.2 Develop a list of indicators ("competencies") that can clearly identify levels of success.

3.3.1 Develop in consort with the instructional staff, tools to evaluate teachers' effectiveness using the course or program objectives as a base.

3.3.2 Develop and initiate regularly scheduled in-service programs for teachers. Implement special in-service programs as needed. Develop an incentive program to guarantee that all instructors have access to the benefits of in-service.

3.3.3 Relate in-service programs and job requirements to existing certification demands. Where applicable develop recommended certifications and forward to appropriate agencies.

3.4.1 Maintain a central course approval process designed to allow interrelationships between local, county, and state level experts.

3.4.2 Include representatives of trade areas (union and non-union) in committees generating trade competencies.

3.5 Develop list of identifiable indicators of success by maintaining an on-going monitoring process. Results of the monitoring process should be reviewed and analyzed to recognize common indicators.

3.6.1 Expose appropriate personnel to the ERIC system.

3.6.2 Maintain a working library of appropriate publications. Conduct an advertising campaign and appropriate in-service workshops to acquaint staff with publications and to encourage their use.

3.7.1 Develop working advisory committees representing different levels of specific trade areas. Levels represented would be management, sales, engineering, and labor.

3.7.2 Develop and maintain general advisory committees representing aspects of the community influenced by the specific trade. This committee would make recommendations with or through the trade advisory committees.

3.7.3 Develop, implement, and use surveys of quality a..d quantity aspects of the products to be produced as a result of worker competencies.

3.7.4 At last students and instructors should be made a formal part of the evaluation of surveys and other developmental processes concerned with CBE.

3.8.1 Maintain a liaison with state officials in appropriate departments and agencies and elected officials (legislators). Make sure that these persons are constantly aware of needs and successes.

3.8.2 Maintain a schedule of in-service activities for administrators and instructors. Lobby to insure that budgets include necessary funds to implement successful in-service programs.

3.8.3 Keep administrative personnel constantly aware of program activities and successes. Apply whatever pressure is necessary to obtain the results desired.

3.8.4 Maintain a consistent contact with recognized formal and informal political leadership. Keep the political community constantly aware of needs and successes.

3.9 Maintain and organize record keeping system that is self monitoring. Proper supervision may be necessary to guarantee proper record keeping.

3.10.1 Take every opportunity to promote CBE and to encourage acceptance of competencies as a base of recognized achievement. Strive for standardized acceptance of standardized competencies.

3.10.2 Be sure that all interested parties are included in developmental activities.

3.11.1 See 3.4.2 and 3.7.1. Identify the advantages of CBE to employers. Seek the support both philosophically and financially of those employers who can clearly benefit from a production point of view.

3.11.2 Maintain active advisory groups as noted in 3.7.1 and 3.7.2.

3.11.3 When developing a curriculum designed for specific trade areas, identify basic skill competencies which would use a substantial (but less than 100%) of the allotted "time frame." The remainder of the "time" can be used to add flexibility needed to meet individual, unique, and changing demands of business and industry.

3.11.4 Maintain the ability to modify the curriculum for changing technologies as noted in 3.11.3.

3.12.1 Make use of trade and general advisory committees to assess community needs. Maintain linkages with recognized agencies that might assist the educational agency in its need to identify community, individual, and industrial needs. These might include the Junior Chamber of Commerce, local business clubs, and recognized special interest groups.

3.12.2 See 3.7.1, 3.7.2 and 3.12.1. Be certain that each segment of the community is represented on appropriate advisory committees.

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Use the pyramid technique to identify formal and informal leadership in the community.

3.13.1 Maintain an active relationship with business and industry leaders so that the educational process can reflect changes in needs and technology. Refer to 2.11.3 and 2.11.4.

3.13.2 Refer to 2.7.1.

3.13.3 Refer to 2.7.2

3.14.1 Be sure that linkages with business and industry include knowledge of manufacturing and labor costs. Identify, with the assistance of business and industry experts, the the additional costs associated with training progrmams. Encourage employers to participate in the programs by absorbing direct costs and encouraging employee involvement by providing materials and, where possible, free time. Employers should be made a part of the developmental process, the monitoring process and advisory activities.

3.14.2 Promote the importance of constant involvement from employers so that they may be aware of the importance of educational programs.

3.15.1 Remind school officials that educational opportunities are the responsibility of the local public school system. Develop conceptual awareness of this responsibility first. Financial and other support from the administrative level will come as a result of this philosophical understanding.

3.15.2 Maintain close contact with the political community. Remind political and school officials that there is mutual advantage to supporting training programs.

3.16.1 Make administration and instructional personnel aware of the advantages and disadvantages of open entry/open exit procedures. Develop curriculum that has enough flexibility to allow for this concept.

3.16.2 Refer to 3.11.3 and 3.11.4. Make available some portion of individual curriculums to allow for the exploitation of specialized instructor knowledge and skills.

3.16.3 Refer to 3.11.3 and 3.11.4. Promote the philosophy of flexibility and individuality as it applies to CBE and an educational objective that allows for a variety of career choices.

3.17.1 Be sure that all participants become part of a team effort. Even though people come with vested interests, a leadership role must be taken to guarantee that the positive results of a cooperative effort are achieved.

3.17.2 Have curriculum content available for appropriate persons. A topical outline available to advisory committees, administrators, and prospective students is desirable. Instructors will experience greater interest and enthusiasm in programs they helped to develop.

3.17.3 Be sure to include all known and appropriate expertise in the development of course content and chronology.

3.18.1 Refer to 3.7.1, 3.7.2, 3.12.1, 3.13.2, and 3.13.3. Make use of all known expertise in relating existing trade, business, and industrial requirements to the competency based educational system.

3.18.2 Refer to 3.7.1 and 3.13.2.

3.18.3 Use control and experimental groups to test programs. Assessments of pilot programs can lend credibility to new and emerging educational concepts.

3.18.4 Monitor and evaluate courses in relation to general educational objectives, competency evaluative instruments and (to note the "bottom line") how many participants gain successful and relatively long term employment.

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INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Robert LaRocque
Assistant Dean of Instruction
Parkersburg Community College
Box 167-A, Rte. 5
Parkersburg, WV 26101

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Procedures for integration of counseling activities into the learning process
   B. "How to" counseling manual
   C. Statewide articulation project (Minnesota)
   D. Teacher training publication (Knaak)
   E. A.P.L. - curriculum development
   F. Competency-Based Job Descriptions (CBJD) - extension of D.O.T.
   G. Administrative procedures to maintain accountability of systems
   H. Places using cognitive mapping
   I. Various inservice educational procedures (PACE)
   J. Life Skills for Job Success Model of Functional Competence

2. Specify the situations or problems to which each of the above may be applied in your job.

   A. I am involved with two federal grants: (1) FIPSE, and (2) grant for disadvantaged students. Both grants are competency-based in that personalized instruction is used as a prescriptive measure for identified needs. I can use points A, B, E,F, G, H, and J above to aid the project directors in designing prescriptive measures.

   B. Teacher inservice this fall (all points above).

   C. Curriculum design procedures for next summer C, D, F, G, H, I.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

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A. FIPSE Grant -- This grant involves the training of blue collar workers on plant sites in industry. A fusion of the concepts of job description procedures and APL would be helpful. Specific portions of both projects can be used to design appropriate modules to address "total" needs. Courses have been in process for one year. New courses based on these concepts and specific information obtained from Joe, Rosemary, Harry, and Buddy will begin to be designed immediately.

Actions	Dates
Task Analysis	already completed
Relating task analysis to APL & CBJD	September 10, 1977
Design terminal behavioral objectives	September 30, 1977
Learning activities to support TBO	October 30, 1977
Presentation of first module	November 15, 1977

B. Disadvantaged Student Grant -- This grant is designed to (1) perform needs assessment, (2) design prescriptive measures, (3) provide prescriptive measures to culturally and economically disadvantaged students to aid them in transition to post-secondary education. Both APL and CBJD will be useful. I already have instructors under contract to design modules in math, reading, career development, etc., which are to be completed by May 22, 1978. Extensive liaison with Joe and Rosemary will be initiated and maintained.

C. Inservice Education -- I will address several of the projects presented here at our faculty inservice between August 22-29 of this year. Certain procedures will be implemented from accountability models used here.

D. As an administrator I will follow-up on several procedures I have learned here, especially those models used by Bill Knaak and John Kobe. Those areas which are applicable will be used on an experimental basis.

Actions	Dates
Call John Kobe	September 15, 1977
Call Bill Knaak	October 1, 1977
Finalize plan	November 15, 1977
Contract for design of course and implement summer contracts.	March 15, 1977

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Etta S. McCulloch, Region III Consultant
Health & Public Service Education Programs
Florida State Dept. of Education
State Office Bldg., Suite 11
941 West Morse Blvd.
Winter Park, FL 32789

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Use of time clock cards for recording earned FTE, attendance, student billing, and establishing work habits.
   B. No fixed student-teacher ratio.
   C. Teacher pre-service, self-instructional materials.
   D. Teacher in-service units used for salary increments using self-instructional materials.
   E. Student must be oriented to individualized instruction.
   F. Student manual with activities (working papers and answers).
   G. Student progress chart for each activity filled in by student.
   H. Certificate with achieved competencies checked off and signed by instructor.
   I. Teacher strategy manual.
   J. Force field analysis of problems of articulation.
   K. List of competencies (minimum performance standards) for each occupation.
   L. Advantages and disadvantages of open entry/open exit.
   M. Less equipment needed in laboratory than with traditional methods.
   N. More audio-visuals and projectors in the auto-tutorial lab.

2. Specify the situations or problems to which each of the above may be applied in your job.

   A. Mechanics of State Department of Education funding policy for individualized instruction.
   B. How to implement pre-service and in-service for teachers to individualize, including part-time teachers.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Action	Date
Discuss the above with my superiors, providing input into the policy-making decisions particularly relating to funding policy.	September 1977

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Claire L. Marshall, Dept. Chairperson
Business & Office Education
St. Croix Central High School
P. O. Box 992
Frederiksted, St. Croix, VI 00840

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. What competency-based education is.
   B. A general idea of how to develop a CBE program.
   C. A general idea of how to implement a CBE program.
   D. That proper evaluation of a CBE program should be an ongoing process.
   E. The difference between the traditional method of education and CBE.
   F. Sources from which CBE materials can be obtained.

2. Specify the situations or problems to which each of the above may be applied in your job.

   Judging from the reports given by the presenters on the success of their programs, the enthusiasm of the presenters, and the overall success of each exemplary program (even though programs were different), I have concluded that CBAVE is undoubtedly a viable solution to the problem of getting people to really learn marketable skills. While this workshop dealt primarily with adult education, small group sessions revealed that CBE is effective on the high school level also.

   Because CBE is based on competency in specific skills, teachers will have to insure that the students they certify can indeed perform on the job.

   On the other hand, administrators and teachers will have greater accountability to their communities for the kind of products they turn out. In addition, teacher accountability will be easier to pinpoint.

I have concluded that CBE could be used very effectively in my job. At the present time, we do use some individualized instruction, but it is not competency-based.

Personally, I have no objections to changing to CBE but I realize that it would be impossible to begin in the fall because we do not have the required learning packets and other materials.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Dates
a) Convert small areas of individualized education to CBE in my classroom.	September, 1977
b) Convene a mini-workshop for the teachers in my department.	1st semester, 1977-78
c) Try to organize a meeting with participants of this workshop who live in my area to determine what we can do to sell the idea of CBE to our fellow teachers.	October, 1977
d) Participate in workshops to help teachers in our area to begin using CBE.	1977-78
e) Seek the assistance of our State Director in getting funds to purchase CBE materials and to train teachers in preparation for conversion to CBE.	

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: James E. Musick, Specialist
Saudi Arabia Vocational Training Project
Bureau of International Labor Affairs
U. S. Dept. of Labor
200 Constitution Ave., Room S-5016
Washington, DC 20210

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Determine what aspects of the exemplary programs presented would be adaptable to curriculum design for use in the Kingdom of Saudi Arabia.

   B. Updated awareness of the role of the U. S. Office of Education and the activities of The Center for Vocational Education as related to CBI.

   C. Adapting existing materials and approach to a second culture and setting.

   D. Convincing those to be involved with the use of materials and the system of the advantages of same.

2. Specify the situations or problems to which each of the above may be applied in your job.

   A. Comparison of the problems related to the development of a curriculum design without the direct involvement of the instructor using the curriculum in the process; to the advantages of having the instructor involved in the development process.

   B. Problem of developing instructional materials that will be relevant in all ways to the cultural setting of Saudi Arabia.

   C. Training of counterpart Saudi instructors in the use of the above mentioned curriculum materials.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Dates
A. Discuss individually with Dr. William Knaak his knowledge and experiences specifically related to his training of instructors from Saudi Arabia.	completed
B. If possible before leaving for Saudi Arabia in September, visit Dr. Knaak's training program.	September, 1977 (if possible)
C. Make contact by telephone with those attending the workshop having materials useful in my work with the Saudi Arabia project.	August, 1977
D. Further determination by individual discussion with presenters of what aspects that make his or her program exemplary and relate these to survey questions.	August, 1977
E. Implement all ideas gained during the workshop in my working with curriculum development and counterpart instructor training in Saudi Arabia.	August, 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Alvin Nowlin, Adult Education Director
Caddo-Kiowa Vo-Tech Center
Box 190
Ft. Cobb, Oklahoma 73038
(304) 643-2244

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A. Confirmed previous commitment to open-entry/open-exit, competency-based individual instruction.

   B. Identified various flexible approaches to help teachers develop curriculum material to meet their individual preferences.

   C. The method of identifying, separating, storing, and dispensing task information and material to save space, time, and money as discussed by Dr. Knaak looks very useable.

   D. Improved system of follow-up procedures and validating.

   E. Student record material for documenting competency achievement to be considered.

   F. In-service training system that is practical for part-time teachers.

   G. Diplomas that specify skills the student has mastered.

2. Specify the situations or problems to which each of the above may be applied in your job.

   A. Developed curriculum material that is available.

   B. Methods of validating training and testing.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Date
The faculty has been working on competency-based instructional material for some time. Most are using the system now or are almost ready to. My first "task" will be to brief the faculty on this workshop and make material available.	8/10/77
There will be two new teachers that will need help in making previous plans meet their needs.	Early '78
We will modify our identification and storage system.	Fall 1977
Modify our record system, and follow-up records.	Fall 1977
Set up a training program for part-time teachers that is practical.	Spring 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Education

Developed by: Melanie J. Parks
Retail/Cashier Instructor
Westside Vo-Tech Center
Orange County School System
731 East Story Road
Winter Garden, Florida 33787
(305) 656-2851

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   Diploma with competencies listed on backside.

   Insight into the fact that comparatively speaking my program is an adequate model for adult competency-based instruction.

2. Specify the situations or problems to which each of the above may be applied in your job.

   Problem with students exiting before time to complete the course.

   Need to show vocational instructors how to convert their curriculum into a competency-based program.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Date
Present the idea of printing such a certificate to my local administrator. If the idea is greeted less than enthusiastically on the school administrative level, approach my advisory people for back-up.	11/1/78
Write an article for Florida Vocational Journal containing information presented to this workshop.	12/1/77

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Alaine G. Powell
Occupational Home Economics Teacher
14-46 Estate Bonne Resolution
St. Thomas, VI 00801

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   A) The meaning of competency-based vocational education.
   B) Methods that can be used in my present classroom set up which will promote student performance.
   C) A clarification of terms used in reference to the competency-based program.
   D) Some advantages and disadvantages that can develop with the competency-based program.

2. Specify the situations or problems to which each of the above may be applied in your job.

   The meaning of competency-based programs and how to utilize the basic concepts of student performance as well as how to incorporate it into the classroom learning segment will provide me with a base to improving methods in vocational education. I will be able to use the hand-outs and information collected from small groups. However, as I have no control over the general program set up, it may all be deleted by the administration.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

   I will use the materials related to my program (Occupational Home Economics). The handouts that Mr. Charles Walejko gave the group will be very useful to me in rewriting the learning package that I presently use.

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Individual Action Plan - Alaine G. Powell, continued

Actions	Dates
Adapting the competency-based approach to my present program	September, 1977
Set up pre-tests and post-tests	October, 1977
Prepare students in different levels	September, 1977 January and May, 1978
Task analysis from the employer	January 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Johnny H. Spears, Instructor
Radio & TV Repair
Tallapoosa-Alexander City Area Training Center
100 East Country Club Drive
Alexander City, AL 35010

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   Diplomas with competencies listed for easy reference by employers. We need better publicity on the developments of competency-based education.

2. Specify the situations or problems to which each of the above may be applied in your job.

   Need more government and state funding for development of competency-based programs.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Action	Date
Will make known the good points of competency-based education and inspire other professional people to get involved in this area	September 1977

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Lena A. Shulterbrandt, Dept. Chairperson
Home Economics
St. Croix Central High School
P. O. Box 676
Frederiksted, St. Croix, VI 00840

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   What competency-based education is? The implementation of competency-based education in the traditional classroom. The advantages of the use of competency-based education in teaching. The advantages to the students.

2. Specify the situations or problems to which each of the above may be applied in your job.

   As a Home Economics teacher in a traditional school system, I was not aware of how a CBE program could be utilized in my classes. The small group discussions and handouts given by the group leaders on CBE have given me a clear insight into the use in the classroom, because we have been using the behavioral objectives but did not have competencies spelled out.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Actions	Dates
The use of pre- and post-tests	October, 1977 January, 1978 June, 1978
Take behavioral objectives and make learning packets that are competency-based	September, 1977
Use of competency-based education in the clothing unit of the occupational class	January, 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Bryan Shuster
Assistant Director of Adult Education
Special School District of St. Louis County
12110 Clayton Road
Town and Country, MO 63131

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   I learned basic concepts of competency-based adult vocational instruction. In my adult program, the CBAVI approach would definitely upgrade the present system now in operation. The system would:

   A. Produce useful knowledge or skills acceptable to the adult learner.

   B. Produce an instructional program resulting in the adult learner acquiring the knowledge and skills required in the occupation with maximum efficiency of time and effort.

   C. Both the learner and instructor would understand the purpose of the activity.

   D. Provide criterion-referenced measures.

2. Specify the situations or problems to which each of the above may be applied in your job.

   A. Adult vocational-technical instruction needs to be upgraded and improved.

   B. Inservice training for the adult vocational-technical instructors needs to be implemented based on the CBAVI approach.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Individual Action Plan - Bryan Shuster, continued

Actions	Date
I wish to organize and implement a CBAVI program in the adult vocational-technical division. I will need more information and help in the near future to implement this type of instruction. I plan to organize a CBAVI program in 10 programs to start	September 1978

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Robert D. Steely, Director
Occupational Programming
Kellogg Community College
450 North Avenue
Battle Creek, MI 49016

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   (Response provided under #3 below.

2. Specify the situations or problems to which each of the above may be applied in your job.

   (Response provided under #3 below.

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Action	Date
. Infuse APL materials into existing federally funded program for disadvantaged and also into class type CETA skills training program.	Fall 1977
. I am presently developing a proposal for Adult Education 309 funds. A developmental project is proposed for an adult skill center. ACE materials and APL materials may be integrated into the adult skill center concept which is conceived as a systems approach extending from outreach efforts to job placement.	due August 15, 1977

. Impact the college's basic education services (remediation) so that the materials developed via the ACE project may be considered. This will be an inservice activity for those faculty working in these programs.	Winter 1977-78
. Although we are involved to a considerable extent in CBE in our vocational-technical programs, we have not progressed to completely individualized instruction with the open entry/open exit concept. This is primarily due to faculty resistance. The workshop has identified for me some outstanding CBE programs that may provide a resource for further information.	as needed

INDIVIDUAL ACTION PLAN

National Workshop on Competency-Based
Adult Vocational Instruction

Developed by: Frank P. Sroka
Chief of Trade & Apprentice Training
Dept. 645, Avery Point
General Dynamics/Electric Boat Division
Eastern Point Road
Groton, CT 06340

Framework: What did you learn?
What good is it?
How will you USE it?
WHEN will you use it?

1. List the ideas, concepts, insights, or techniques related to your job which you gained in this Workshop.

   My objective is to internalize concepts learned during the Workshop and to then apply them to the problem(s) of developing competency-based instructional modules for industrial training programs in these areas: (1) pre-employment training; (2) on-the-job training; (3) post-employment skill training; and (4) apprentice school training, including related instruction. My present training programs are performance-based, but not all the concepts of the competency-based approach are applied uniformly in all areas, particularly in the area of apprentice training.

   Job-Related Concepts

   I found the following concepts particularly related to my job, especially in terms of expanding the competency-based approach to all the programs under my cognizance:

   - Competency-based curriculum: do all curriculum materials reflect the competency-based approach in both content and presentation?
   - Individualized instruction, especially the use of learner packets, V-TECS catalogs, self-paced packages, etc.: how can I adapt these to my situation?
   - Criterion-referenced testing: do all test materials reflect a job-analysis data base, properly constructed and validated?
   - Adult Performance Level: although not directly related, certain concepts can be applied to purely industrial programs, especially in the area of motivation and relationship to other areas of living.

. Task analysis: must be completed in order to relate total curriculum to the job, i.e., what job elements require that a sheet metal mechanic be exposed to trigonometry in his related education?

. Teacher education: all instructors must be thoroughly familiar with and committed to the concept of competency-based instruction.

. Program evaluation: an on-going process to assess curriculum validity and ensure that the students see the usefulness of the material as well as the scientific, data-based relationship.

2. Specify the situations or problems to which each of the above may be applied in your job.

Situation Matrix (Question 1 vs. Question 2)

In this matrix, the "Xs" denote those priorities identified in the small group that may be applied to my job in terms of those concepts listed in Question #1.

	COMP-BASED CURRICULUM	INDIVIDUALIZED INSTRUCTION	CRIT-REF TESTING	APL	TASK ANALYSIS	TEACHER ED	PROG EVAL
DEFINITION OF CBE	X	X	X		X	X	X
HOW IMPLEMENT CBE	X	X	X	X	X	X	X
HOW DEV CURRICULUM	X	X	X		X		X
CHANGE ATTITUDES	X	X				X	
WHAT IS COMPETENCY?	X	X	X		X		X
HOW MANAGE	X	X	X	X	X	X	X
BASIC SKILLS	X	X	X	X	X		X
HUMANISM	X	X		X		X	

3. List the ACTIONS you can take to apply what you learned to the situation or problems above. Beside each of the actions listed, record your best estimate of when it should be accomplished (month/day/year).

Individual Action Plan - Frank P. Sroka, continued

Actions	Dates
. Review all curriculum packages to determine those most in need of upgrade to CBE	October 1, 1977
. List, in priority order, those areas to be addressed	October 15, 1977
. Refine our present standardized lesson plan format to reflect CBE more clearly	October 21, 1977
. Develop action plans for each curriculum program to be updated	November 10, 1977
. Conduct required job analyses	March 1, 1978
. Develop curriculum packages (including test materials)	December 31, 1978
. Complete test validation and revise accordingly	March 31, 1978
. Conduct program evaluation	Ongoing

APPENDIX A

WORKSHOP PROGRAM

PROGRAM

NATIONAL WORKSHOP ON COMPETENCY-BASED
ADULT VOCATIONAL INSTRUCTION

Tuesday, August 2

8:00 a.m.	Registration
9:00 a.m.	"Workshop Overview and Expected Outcomes" Earl B. Russell, CBAVE Project Director
9:20 a.m.	"Our Commitment to Competency-Based Education and Adult Vocational Education" Robert E. Taylor, Executive Director of The Center
9:45 a.m.	"Activities of the U. S. Office of Education in Competency-Based Adult Vocational Programs" Louis H. Anderson, Project Officer Bureau of Occupational and Adult Education U. S. Office of Education Washington, D.C.
10:15 a.m.	Break
10:30 a.m.	"What Every Participant Has Been Waiting to Find Out About the National Survey of Competency-Based Adult Vocational Instruction" Cynthia Anderson, Program Associate John Boulmetis, Research Associate Earl Russell, Project Director
11:45 a.m.	Lunch
12:30 p.m.	For members of Groups AA and BB who wish to have a tour of The Center for Vocational Education, please meet Cindy Anderson and John Boulmetis in the lobby at this time. These people should be among the first in the lunch line.
1:00 p.m.	Small Group Session--Focus: Determining Priorities for Strengthening or Starting Competency-Based Vocational Programs for Adults
3:00 p.m.	Break

3:30 p.m. Exemplary CBAV Program #1--Instructor Initiated and Operated

Charles Walejko, Division Chairperson
Woodruff Regional Occupational Center
Stockton, California

4:15 p.m. Exemplary CBAV Program #2--A Large, Comprehensive Program

John Kobe, Adult Vocational Director
Suburban Hennepin County Area Vo-Tech Centers
District Office
Minneapolis, Minnesota

5:00 p.m. Adjourn

6:00 p.m. Social Hour (cash bar with complimentary hors d'oeuvres), Buckeye Room, 11th Floor, Holiday Inn

Wednesday, August 3

9:00 a.m. Exemplary CBAV Program #3--Inter-Agency Roles and Functions

Norma B. Brewer, Research Associate
Research Coordinating Unit
Montgomery, Alabama

Johnny H. Spears, Instructor
Radio and TV Repair
Tallapoosa-Alexander City Area Training Center
Alexander City, Alabama

9:45 a.m. Exemplary CBAV Program #4--Adult Competency Education Project

Joe Cooney, Director
ACE Project
San Mateo County Office of Education
Redwood City, California

10:30 a.m. Break

10:45 a.m. Exemplary CBAV Program #5--The Adult Performance Level Approach in Adult Vocational-Education (A panel presentation and discussion)

Buddy Lyle, APL Project Director
University of Texas
Austin, Texas

Rosemary Dawson, Coordinator
Competency-Based Diploma Project
Los Angeles Unified School District
Los Angeles, California

Harry E. Frank, Associate Professor
Vocational and Adult Education
Auburn University
Auburn, Alabama

12:00 noon — Lunch

12:45 p.m. — For members of Groups CC and DD who wish to have a tour of The Center for Vocational Education, please meet Cindy Anderson and John Boulmetis in the lobby at this time. These people should be among the first in the lunch line.

1:30 p.m. — Exemplary CBAV Program #6--Administration, Development, and Operation

William Knaak, Superintendent
916 Area Vo-Tech Institute
White Bear Lake, Minnesota

2:15 p.m. — Small Group and Individual Work Session Details

2:30 p.m. — Convening of Small Group Work Sessions (Six open entry/open exit work groups, led by resource persons including presenters of exemplary programs. These groups will operate concurrently within the approximate time ranges specified.)

3:15 p.m. — Break

3:30 p.m. — Individuals Change Groups if Ready

4:15 p.m. — Individual Work Time/Consultation with Resource Persons

5:00 p.m. — Adjourn

Meanwhile, waiting for the bus . . . For members of Groups EE and FF who wish to have a tour of The Center for Vocational Education, please meet Cindy Anderson and John Boulmetis in the lobby at this time.

Thursday, August 4

9:00 a.m. — Large Group Progress Check

9:15 a.m. — Individuals Join New Small Groups if Ready

10:00 a.m. — Break

10:15 a.m. — Individuals Change Groups if Ready

11:00 a.m. — Individual Work Time/Consultation with Resource Persons

12:00 noon — Lunch

12:45 p.m. Slide Demonstration--"Competency-Based Instruction for Disadvantaged Adults"

Melanie J. Parks, Retail Cashier Instructor
Westside Vocational-Technical Center
Winter Garden, Florida

1:30 p.m. Small Groups Re-convene: Individuals Change Groups if Ready

2:15 p.m. Individuals Change Groups if Ready

3:00 p.m. Break

3:15 p.m. Individual Work Time: Focus--Preparation of Individual Action Plan

4:15 p.m. Large Group Progress Check

4:30 p.m. Adjourn

Friday, August 5

8:30 a.m. Finalize Individual Action Plans/Consultation with Resource Persons

9:45 a.m. Break

10:00 a.m. Adult Education Resources Available from The Center

Career Planning Programs for Women Employees

Patricia Winkfield, Research Specialist

Performance-Based Teacher Education Modules

Glen Fardig, Research Specialist

Cooperative Adult Education; The ERIC Clearinghouse on Career Education (includes Adult and Vocational Education)

Bernie Moore, Adult and Continuing Education Specialist in the Clearinghouse

Metric Education Instructional Materials for Vocational, Technical, and Adult Education

John Peterson, Research Specialist

11:15 a.m. Workshop Summary

11:30 a.m. Adjourn

APPENDIX B

WORKSHOP PARTICIPANTS

REGISTRANTS/PARTICIPANTS/PRESENTERS

National Workshop on Competency-Based
Adult Vocational Instruction

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Radio & TV Repair
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General Dynamics/Electric Boat
Division
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PH: (203) 446-3180

DISTRICT OF COLUMBIA

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Program and Demonstration Branch
Division of Research and Demonstration
U. S. Office of Education
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Saudi Arabia Vocational Training
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APPENDIX C

SELECTED READING LIST

SELECTED READING LIST

National Workshop on Competency-Based
Adult Vocational Instruction

Anderson, F. L. Individualized, performance-based curriculum at the Minneapolis area vocational technical institute. Interim Report-3-D-75. Minneapolis, MN: Minnesota Department of Education, 1975.

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APPENDIX D

FINAL EVALUATION OF THE WORKSHOP

Final Evaluation of the
National Workshop on Competency-Based Adult Vocational Instruction

Subscale	Item	Percent of Responses (n=36)				Mean Rating
		Hearty Yes! Great! 1	2	3	No, Lousy! Boo! 4	
VALUE	1. Did the workshop deliver what was promised in the advance literature?	81.3	18.7	---	---	1.19
	2. Was the workshop relevant to your needs?	58.4	36.2	7.4	---	1.47
	3. Do you feel that you learned something useful?	83.4	16.6	---	---	1.17
CONTENT	4. Was the level of treatment of topics appropriate?	64.7	35.3	---	---	1.35
	5. Were the following effective:					
	a. visuals?	66.8	27.8	2.7	2.7	1.42
	b. workshop materials?	83.4	13.9	2.7	---	1.20
	c. audience participation in large group sessions?	44.5	50.0	2.7	2.7	1.64
	d. small group working sessions?	51.5	31.5	17.0	---	1.66
DELIVERY	6. Were the deliveries of presentations authoritative?	75.0	25.0	---	---	1.25
	7. Were the presentations interesting?	72.3	25.0	2.7	---	1.31
	8. Were the presentations entertaining?	42.5	42.9	11.5	2.7	1.74
ORGANIZATION	9 Was the workshop well organized?	86.2	13.8	---	---	1.14
	10. Were the overall program activities and ideas interesting?	83.4	16.6	---	---	1.17
	11. Were the presenters sufficiently prepared and knowledgeable?	88.9	11.1	---	---	1.11
	12. Was the pre-workshop information sufficient?	71.9	18.8	9.3	---	1.38